101

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TECHNOLOGY FOR HIGHER EDUCATION

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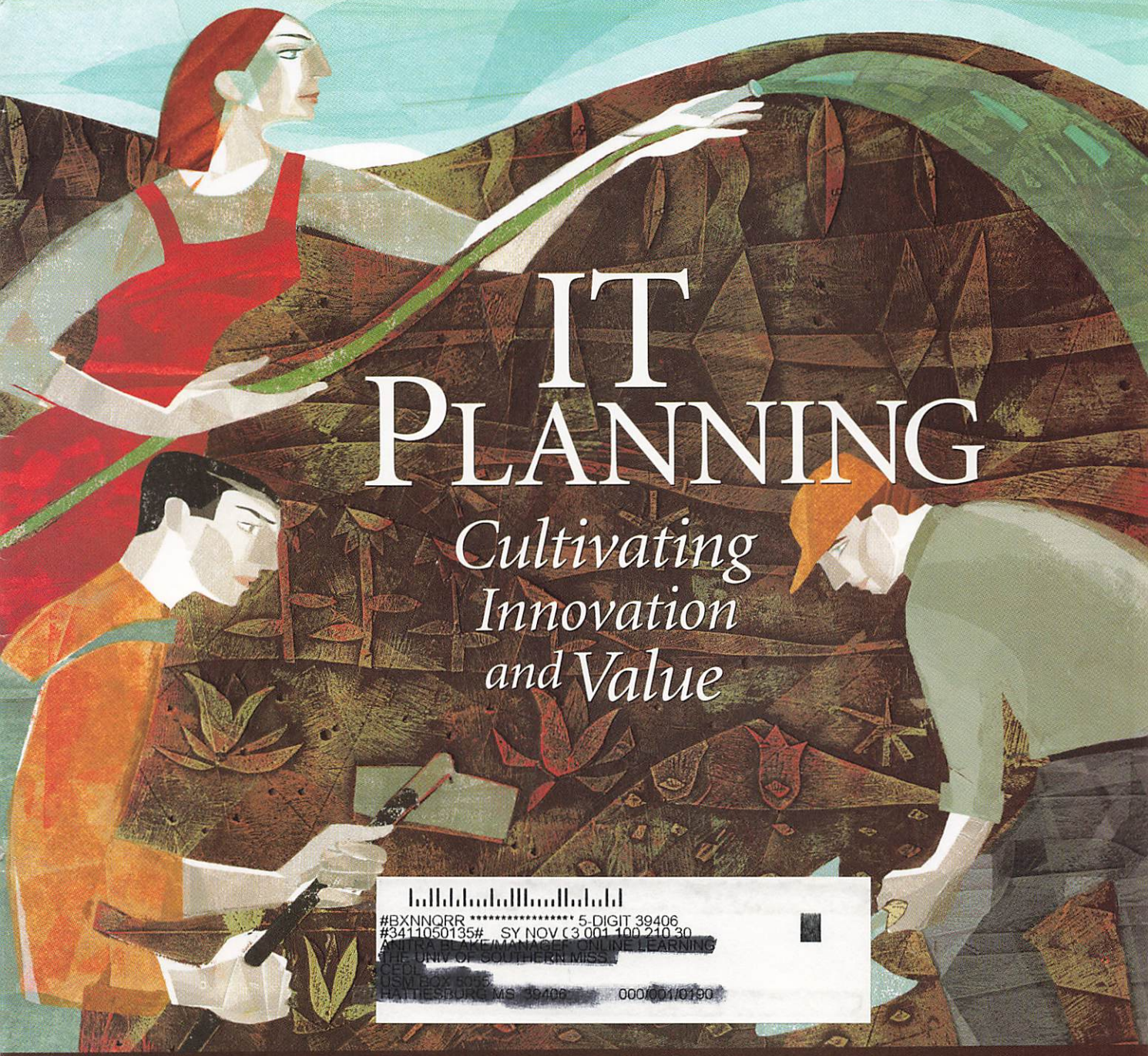

IT Planning

Cultivating Innovation and Value

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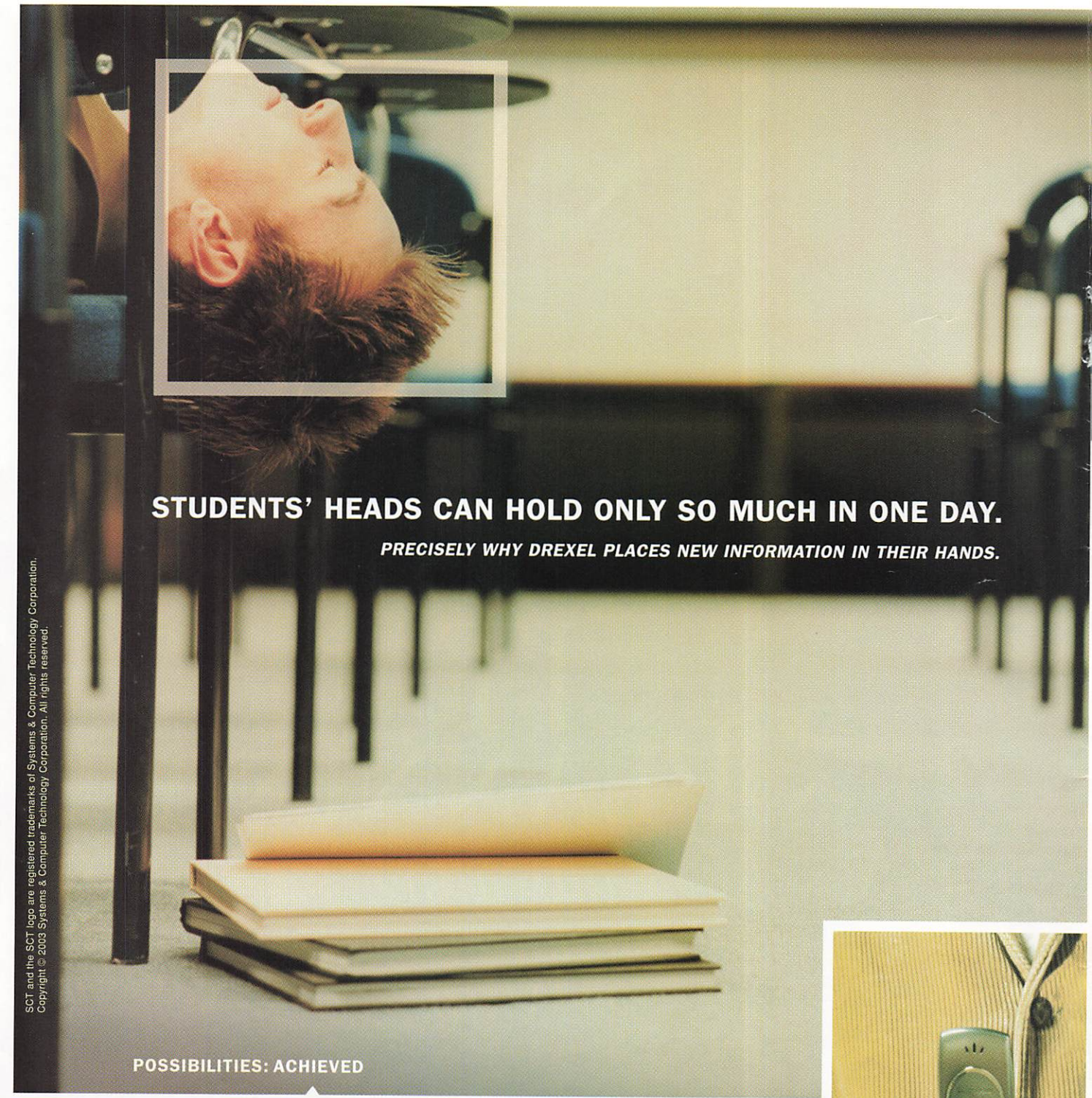
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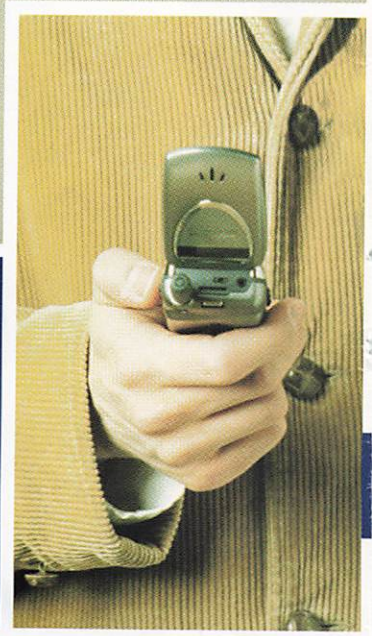

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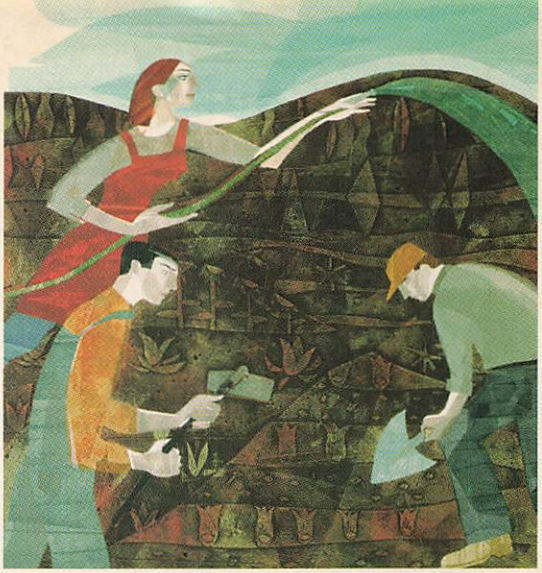

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Donald M. Norris and Anne K. Keehn
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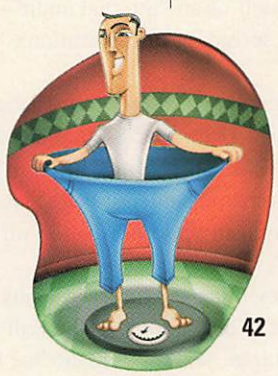

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EDITOR'S NOTE

Mary Grush, Editor

The words "IT planning" conjure up different images for different people—some may think of blueprints for computer labs and smart classrooms, others may picture diagrams of network infrastructure, while still others might see flowcharts of interconnected enterprise systems and services. So, why do we feature a garden scene on our cover?

In discussions with IT leadership at colleges and universities of various sizes and types across the country, the Syllabus research team found that IT planning is done in the broader context of the institutional mission. Yes, technology is well-integrated into normal work processes, and of course it's a part of the basic expectations of campus constituents—an acknowledged component of the institution's strategic planning process. But more than that, IT planners are tapping into the transformational value of technology, setting their sights on creating new values and future potential for their institutions. In this issue, we explore some ideas from campus leaders who are "planting the seeds," so to speak, of innovation in higher education technology.

In our lead feature article, "IT Planning: Cultivating Innovation and Value" (page 10), Don Norris and Ann Keehn suggest that real technology innovation may help create new and alternative value propositions for students, faculty, staff, and other stakeholders at colleges and universities. Institutions can differentiate themselves through programs that offer personalized experiences and maximize a host of other values for stakeholders.

Among the values that have changed radically with technology is access to information. James Boyle, a founder of the Creative Commons, takes on the issues of digital rights in "Who Stole the Goose?" (page 22), excerpted and adapted (with permission!) from his keynote this past July at Syllabus2003. You will notice that the article is made available, appropriately, under a Creative Commons License. Faculty are stakeholders who will appreciate "Master Planners: Faculty Development" (page 25), in which David Starrett and Michael Rodgers consider how faculty development programs support the integration of IT in teaching and learning—critical to any institution's IT strategy. And in "Leveraging Academic Assets" (page 29), Evan Robinson puts a practical spin on IT planning by introducing the notion of an "internal audit"—to identify online offerings that could be reused and shared, spreading the institution's "most valuable asset, the collective expertise of its faculty."

I hope that you will be attending next month's Syllabus conference, our fifth annual fall event in the Boston area, held December 8-10 at the Hyatt Regency Cambridge. We're excited to present keynoter William J. Mitchell, Dean of Architecture and Planning at MIT, along with president Graham Spanier of Penn State, and from Princeton, technology strategist Howard Strauss. You can find information on Syllabus fall2003 on page 17 and at www.syllabus.com.

If you are interested in presenting at a future Syllabus conference, right now is an excellent time to do your research. Take a look at the Call for Papers for our next summer conference, Syllabus2004, on page 38. Proposals are due January 5, 2004.

Enjoy this issue of *Syllabus*!

Mary Grush

Letters to the editor should be addressed to the editor and sent to 101 First Street, #605, Los Altos, CA 94022, or via electronic mail (mgrush@syllabus.com). We reserve the right to edit all submissions. **News and product information** will be considered for publication. Please send all materials to Paul McCloskey. If you are interested in writing for *Syllabus*, please send a brief description of your article idea along with writing samples to the editor at the above address.

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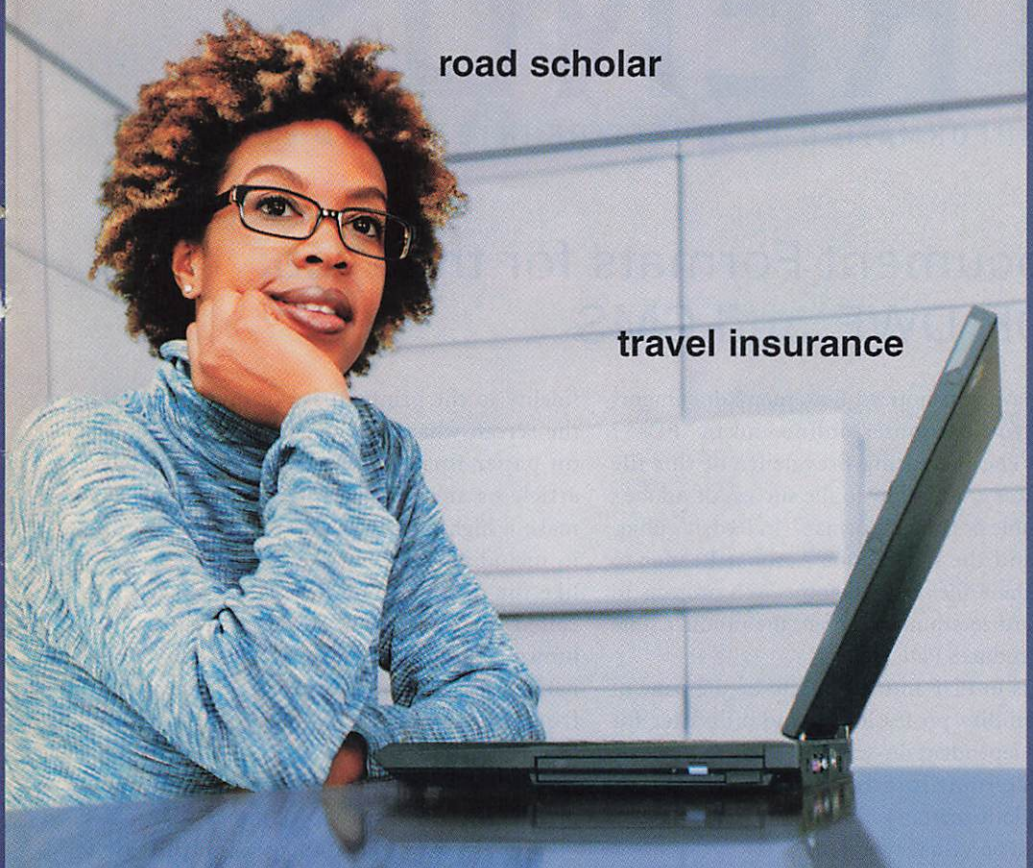

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Phillip D. Long

TRENDS

AN INFORMATION RESOURCE OF INTEREST TO EDUCATORS

Document Formats for the Web: PDF, DWF, and CMS

BRIEFS

- Office services king Kinko's will offer coursepacks, compilations of course materials used to supplement traditional textbooks, to the higher education market.
- **The National Science Foundation** will award $9 million to **U.C. Irvine** and $3.5 million to **U.C. San Diego** to develop information sharing tools and organizational strategies for first responders and emergency service providers.
- A Student design teams from the **University of Minnesota**, **U.C. San Diego**, and **Cornell** won first, second, and third place in a chip design contest sponsored by the Semiconductor Research Corp.
- A federal jury awarded **CollegeNET** $1.2 million in damages for infringement of two patents covering its Universal Forms Engine.

For these and other news stories, or to subscribe to our eNewsletters, Syllabus News Update and Syllabus IT Trends, visit www.syllabus.com.

Have you noticed how many documents you encounter online end in "PDF"? The increasing prevalence of this file format is a testimony to the success of Adobe's "portable document format." Indeed, it's ubiquity and the free Adobe Acrobat Reader to view these files has led some Web projects to standardize around Acrobat, the product suite that produces PDF files.

Files in PDF format used to be the bane of accessibility professionals and a disaster for those dependent on-screen readers to translate Web content into interpretable formats (audio or large-type visual representation). PDFs presented a "disabled not allowed" sign to information viewable to others. So why has the popularity of PDF files grown so widely?

PDFs represent independence from the idiosyncrasies of software applications and printers. In effect, PDFs claim cross-platform compatibility, application independence, and content integrity for documents distributed via the Web. With the recent successes of Adobe's e-Paper division, the producer of Acrobat, it seems that the newest release of Acrobat 6.0 addresses some of the criticism.

Making PDFs More Useful

As with most things involving structure and text that relate to the Web, XML (eXtensible Markup Language) comes to the rescue. The newest release of Acrobat's PDF file format incorporates some features from the land XML.

One of the primary reasons that PDFs became popular in the first place was the fidelity to the printed page of presenting on the screen what was formerly only available on paper format. You can take a journal article or any other printed document and make a high-quality digital representation of it, including the ability to reprint it exactly like the original. The PDF Reader is easily called by other applications, whether as a browser plug-in to view a file, or as an alternative print driver to create a PDF document from another application, e.g., Microsoft Word. So far so good.

PDFs are much more readable than a scanned TIFF image, and provide value-added display control. Until relatively recently, they were just a bag o' bits with a simple presentation interface.

XML provides a mechanism for adding structure to the parts of a document. In particular, with XML, business logic can be imbedded in the document so that it can be acted on in a workflow process. XML forms and their associated logic can use PDF as a familiar interaction interface. Perhaps most interesting is the ability to add digital signatures, metadata, and schemas to the PDF. This is particularly important to enable the PDF document to interact with search tools and cataloging systems for query and archiving—definitely a step in the right direction. It's no surprise that Adobe has decided on this strategy to make the PDF a major player in complex document management environments, leveraging its strength as an interface to present digital images as faithful representations of the printed page.

Puzzled by CMS?

CMS Review

Syllabus

Wednesday, October 15, 2003

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by Frank Tansey

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- Blackboard to Enter Content Management Market
- eCollege to Acquire College Enrollment Marketing Firm
- Belgium Invests One Million Euros for Claroline

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- Help in Selecting a Course Management System

READER RESPONSE
- What do you think about the new CMS Review?

Viewpoint

A Challenge for Any CMS

by Frank Tansey

The installation and maintenance of a course management system is a challenge in most situations. Campus and organizations installing a CMS must add to their existing infrastructure and then address the issues of obtaining and maintaining content, as well as addressing support and technical services.

As difficult as it might be to install and maintain a campus-based CMS, imagine the issues that must be addressed to create a technical infrastructure in areas where none now exists. Then add a critical need to introduce online learning concepts to a population with limited access to personal computers. Finally, and perhaps most important, provide content to address critical societal needs.

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Course Management Systems. The complexity is as significant as the payoff. That's why Syllabus has launched CMS Review, a new biweekly e-newsletter focused specifically on e-Learning . . . its technology and implementation.

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Alternatives or Complements to PDFs?

While Adobe has exceeded Wall Street expectations in its recent quarterly report, other file formats are being presented to address perceived weaknesses, including advocates restricting the use of the PDF format altogether.

Autodesk, makers of AutoCAD design software, have an open file standard called Design Web Format (DWF), that claims to create, display, and print multi-sheet computer-aided design drawings faster, with higher resolution, and in smaller file sizes, than can be done with PDFs. It's limited currently to design documents, but if you need to work with them, you're probably already working with AutoCAD files. Others can view them with the Autodesk Express Viewer or the Autodesk Volo View application.

Then again, why exactly are you putting these files up on your Web site or course management system? Jakob Nielsen of useit.com (Usable Information Technology) argues that PDFs are really good for one thing: printing. If your intention is anything but that, you should consider using something else, he argues. His suggestions hinge around presenting the best user experience possible. That is, give users enough information about the document to justify downloading and opening up a helper application to proceed further. In addition, Nielsen urges you to prevent search engine spiders from indexing the words in PDF that, on hyperlinking to them, dump the user to the PDF's front page, nowhere near the indexed word.

CMS and The Digital Paper Chase

One of the surprises faculty encounter when switching to using a CMS in teaching is the extent to which we rely on paper for course materials. The life cycle of material selected for teaching a course is more complex than we tend to acknowledge. Some of the critical elements include:

- Conceptualizing what is required;
- Finding it;
- Digitizing into some acceptable file format (if not originally electronic);
- Placing it on the CMS;
- Deciding what to do with it when the course ends.

These are steps we go through in preparing for our teaching in general. Now that we're using CMSes to extend the interaction with course material online, the full life cycle of electronic documents becomes an issue for faculty, for IT departments running CMSes for their institutions, and for the CMS vendors. Is your CMS a 'roach motel' for your course materials? You need a personal, as well as institutional strategy for CMS electronic document management. We'll approach this in future columns.

Phil Long, Ph.D. *(longpd@mindspring.com) is senior strategist for the Academic Computing Enterprise at MIT. He is also a senior associate for the TLT Group of the AAHE.*

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MIT Disabilities Resources for Information Technology http://web.mit.edu/atic/www/sw/
Section 508-Specific References:
JimThatcher.com (Accessibility Consulting) http://jimthatcher.com/sidebyside.htm
Adobe Section 508 Templates http://access.adobe.com/section508.html
Section 508 of the Rehabilitation Act:
Electronic and Information Technology Accessibility Standards http://www.access-board.gov/508.htm

> **10:45 pm.** To provide more answers to more technology questions, CDW·G account manager Nora Weeks engages in her own form of homework.

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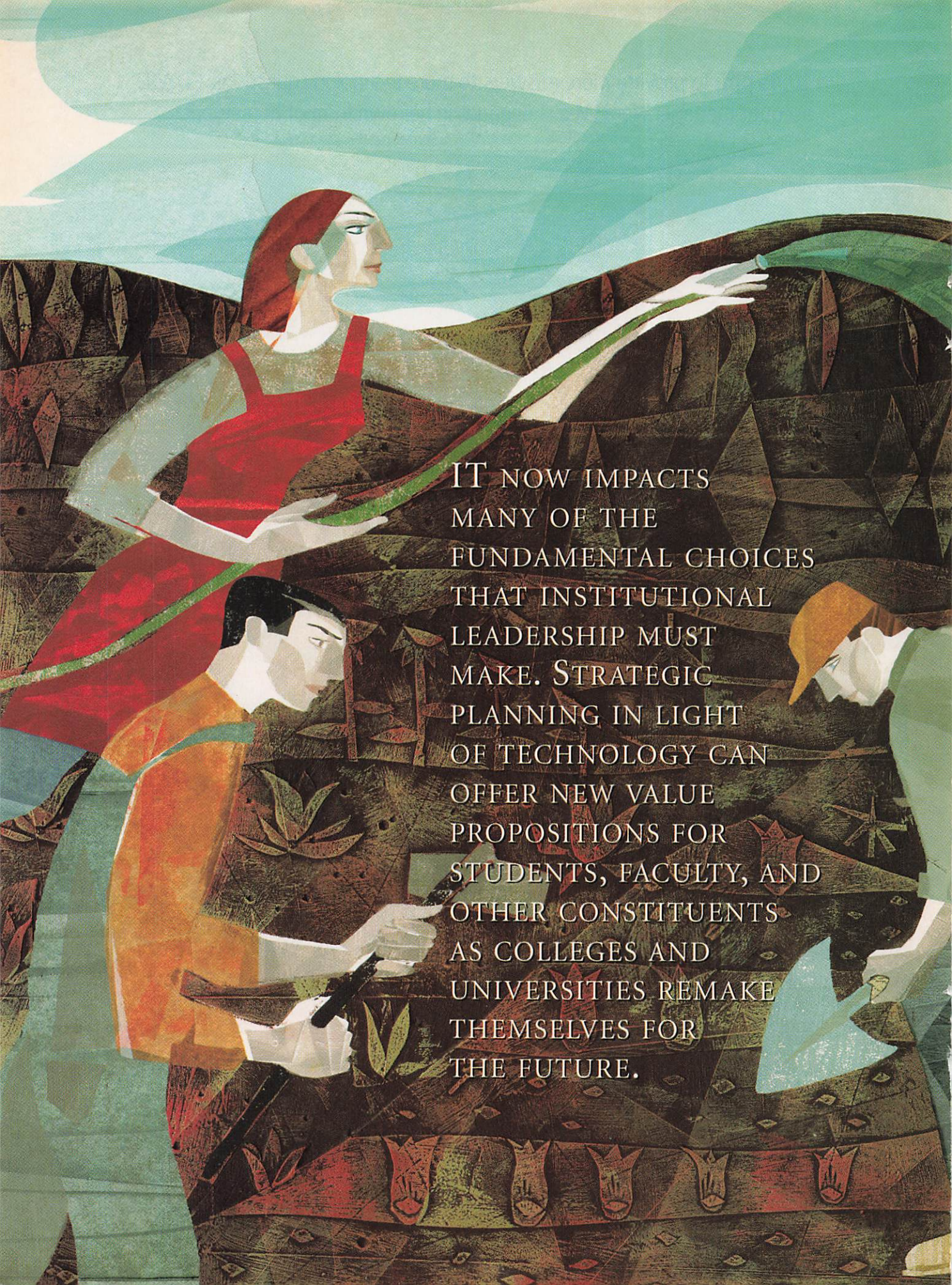

IT NOW IMPACTS MANY OF THE FUNDAMENTAL CHOICES THAT INSTITUTIONAL LEADERSHIP MUST MAKE. STRATEGIC PLANNING IN LIGHT OF TECHNOLOGY CAN OFFER NEW VALUE PROPOSITIONS FOR STUDENTS, FACULTY, AND OTHER CONSTITUENTS AS COLLEGES AND UNIVERSITIES REMAKE THEMSELVES FOR THE FUTURE.

IT PLANNING

Cultivating Innovation and Value

By Donald M. Norris and Anne K. Keehn

Nicolas G. Carr provoked a vigorous debate with his article, "IT Doesn't Matter," in the May 2003 issue of the *Harvard Business Review.* Echoing the concerns of many corporate CEOs and university presidents, Carr suggested that information technology (IT) had become a commodity, offering precious little strategic differentiation [1]. A stream of authors refuted Carr's thesis [2, 3, 4] through every conceivable medium—e-mails, blogs, letters to the editor of HBR, articles, and newly published books. They all suggested some variation on the contention that IT can deliver strategic differentiation, leading to competitive advantage, but only if enterprises use IT to fundamentally change the dynamics of their organizations through collaboration and innovation in support of the process of change. Innovation can be leveraged using the insights resulting from a new breed of strategic planning for IT that focuses on deploying IT to create new value propositions and experiences for learners and other stakeholders that are truly transformational.

Why should colleges and universities care about "strategic differentiation" if their fundamental mission is teaching and learning (and research and other things as well)? Too many institutions settle for "competitive parity" with a group of peer institutions. They should set their sights higher, building a "learner-centric" focus and questing to truly differentiate themselves from other institutions through maximizing value for their individual learners and other stakeholders. This will yield the "competitive advantage" necessary to attract and assure the resources necessary to support investments in IT and development of new practices and competencies. In order to fulfill their mission of service to learners and to justify their investments in IT, colleges and universities should use IT to drive innovation in pursuit of greater value for learners and other stakeholders.

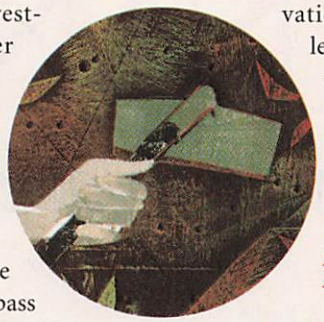
But not all innovation is equal. Experience with leading-edge organizations suggests that systemic, enterprise-wide innovation is more effective in creating value differentiation between enterprises than fragmented, individual innovation [5]. Moreover, many organizations are shifting the focus of innovation away from products and services and toward the experiences through which individual stakeholders are engaged [6]. IT strategic planning needs to move

Illustrated by Lorraine Tuson

beyond planning, implementing, and executing "systems of record," to creating stretch goals for using IT to enable innovation, personalized value propositions, and new experiences for stakeholders. This will generate genuine competitive distinctiveness.

Creating New Value Propositions

IT strategic planning needs to address what value is all about and how IT can be used to maximize it. The conversation about value on investment (VOI) in higher education was carried several steps further in the ECAR *Research Bulletin* "Value on Investment in Higher Education" [7]. Value was suggested as a more discerning strategic compass than measures of relative quality or reputation for many colleges and universities facing times that are both uncertain and resource strapped. Quality measures often emphasize inputs, rather than outcomes. The level of resources is often taken as a surrogate for quality. Such measures rely on quantitative metrics that can be compared easily and aggregated to an institutional total, rather than being guided by what is important to stakeholders. Quality is a *monologue* by institutions and the arbiters of programmatic/reputational quality. On the other hand, value is a *dialogue* between institutions and individual stakeholders.



Value balances three factors: (1) the nature and quality of outcomes, (2) the essence of the experiences through which the outcomes are achieved, and (3) the cost/price. Like the potential energy in the coils of a spring, latent value resides in the knowledge resources, programs, processes, relationships, infrastructure, and competencies of faculty, staff, students, and other stakeholders. The manner in which these resources are combined and engaged determines the value experienced by each individual stakeholder. The capacity to enable new and personalized experiences and value propositions is an important institutional competency.

Delivering greater value for learners and other stakeholders can create strategic differentiation for individual colleges and universities. Two institutions with similar "quality" of programs in the eyes of external evaluators can have substantially different value propositions in the eyes of particular learners and other stakeholders. Enhancing the value proposition for stakeholders will require greater levels of collaboration, innovation, and creativity, at all levels—individual, departmental, institutional, and inter-institutional. Given resource scarcity, discerning and piecing together distinctive clusters of hidden value is emerging as a newly appreciated form of innovation.

IT strategic planning needs to address what value is all about and how IT can be used to maximize it.

Overcoming Our Innovation Deficit

American universities are "innovation challenged" as enterprises. We encourage innovation with a small "i"—individual research, pilot projects, functional improvements, and new, experimental practices. But we often treat these innovations as "add ons" or "one offs" that operate in a parallel universe to existing core practices. In truth, colleges and universities have been ineffectual in innovation with a capital "I"—spreading the DNA from successful, proven innovations across the institution and changing core practices in response to new insights on best practices. Systemic, institution-wide innovation is our short suit, at the very time that such innovation is being shown to be essential to competitive relevance in the Knowledge Economy [8]. In order to thrive, colleges and universities must overcome this deficit and leverage collaboration, innovation, and creativity. Rather than aiming for mere competitive parity with other institutions, we need to consciously focus on maximizing value for stakeholders. This will lead to "competitive relevance," combining distinctiveness with focus on the stakeholder. The innovation dialogue needs to include all levels of leadership. To foster innovation and drive direct value for the stakeholders, the IT infrastructure needs to align with institutional operations and overall institutional strategy.

The innovation deficit in higher education was described by Mary B. Marcy in a recent Point of View in *The Chronicle of Higher Education*[9]. Dr. Marcy noted that even successful innovations (such as learning communities, student engagement, and the use of IT to reinvent courses) are seldom integrated into the institutional culture and spread across the enterprise. She goes on to suggest that many foundations are withdrawing funding for research on innovation in higher education because it doesn't lead to broad-scale dissemination.

Scalable and Enterprise-Level

Encouraging "1,000 points of light" of individual innovation can be a good beginning point for identifying potential, enterprise-level innovations, but not always. Successful, enterprise-wide learning support innovations usually fulfill some combination of three criteria: (1) the innovations are "scalable," enabling the resources, materials, and standards of learning for courses to be used for multiple sections of the same course and even in other courses and contexts with modest repurposing; (2) the most successful practices can be leveraged and deployed across the institution and even beyond, and (3) the innovations create new experiences and value

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propositions for learners. But innovations in higher education have often fallen short of this mark. For example, the early generations of using PCs and the Internet to advance learning failed to produce software applications and materials that were scalable beyond classes of 30-50 students [10]. Moreover, they enshrined the notion, still common in some sectors of higher education, that "quality" courses must be developed personally by each individual faculty member.

Clearly, a focus on **innovation and value** has taken **root in the soil** of American **higher education.**

On the other hand, scalable, enterprise-wide innovations have been around both public and for-profit higher education for a long time. The British Open University was a pioneer in the use of innovative, team-developed, scalable learning resources, starting years ago as correspondence courses. The University of Phoenix and other for-profit learning providers also practice scalable, enterprise-level innovation, as does UMassOnline among other nonprofit institutions. The University of Southern Queensland is taking these practices a step further, infusing advanced knowledge management practices into its learning offerings, providing learners with new experiences and 24/7 interactivity with exceptional learning resources and insights [11] In most settings, however, higher education remains a "handicraft" industry, where insight and innovations remain within individual faculty, courses, or laboratories. To be sure, professional associations and scholarly communications within the disciplines offer particular kinds of collaboration. However, a "cottage industry" approach to learning environments prevails. If continued, this will doom higher education's capacity to innovate at the enterprise level.

A Host of Institutions Show the Way

As recently as five years ago, it could honestly be said that there was a dearth of proven innovations and practices that could be leveraged to drive enterprise-wide innovation in higher education. This is no longer so. The so-called "back to school" issue of the *EDUCAUSE Review* offers dramatic examples of successful, IT-supported innovations in learning experiences that can be leveraged to create enterprise-wide impact. "A Revolution in Knowledge Sharing" describes emerging innovations in knowledge sharing and digital asset management [12]. Carol A. Twigg writes of the Pew-funded Program on Course Redesign, which utilized a wide variety of different approaches to truly reinvent large lecture sections, enhancing performance and dramatically reducing costs in the process [12]. Carole A. Barone describes the evolving work of the National Learning Infrastructure Initiative (NLII) to support learning innovation at individual, department, institutional, and consortial levels [13]. Dr. Barone cites a number of noteworthy enterprise-level innovations: the Modular Organizer and Teaching System (MOATS) at the University of Arizona, which provides guidance in developing learner-centered practices across the institution; the Student Learning Objectives (SOL) System at the University of Washington, defining learning objectives for all of the University's 6,000 undergraduate courses; and the consortia efforts of the Open Knowledge Initiative (OKI) and the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) to advance the sharing of knowledge objects for learning.

Moreover, Allen E. Guskin and Mary B. Marcy's article in *Change* [15] captures the work of the Project for the Future of Higher Education. They describe a set of practical, proven principles for establishing a learner-focused culture, a sustainable faculty professional experience, and reduced cost per student, all driven by changes in the patterns and cadences of the undergraduate experience and supported by IT-enabled innovation. Further, many of the programs of the American Association for Higher Education—learning communities, service learning, teaching and learning roundtables—have established archipelagos of innovation across the higher education landscape. Clearly, a focus on innovation and value has taken root in the soil of American higher education. It's time to "water where the grass is green" and facilitate the spreading of these innovations so they can become systemic.

Driving Value, Using IT

American colleges and universities are the envy of the world, based on traditional measures of quality—reputation and image, quality of graduate and professional programs, funded research and Nobel Prizes won by faculty and researchers, expenditures for information and communications technology, campus facilities and amenities, and many additional indicators. But the times call for paying attention to new vectors of value on campus and mobilizing new approaches. Campuses need to use IT to support innovation, create new experiences for learners, and facilitate cost reduction. The next generation of innovations in higher education will seek to create new, personalized value propositions for learners, faculty, staff, and other stakeholders. Consider what could happen to the learning experience by seriously committing to stakeholder value.

Crafting Stretch Goals

IT is a key enabler of innovation and new, personalized value propositions. In order to justify ongoing investments in enterprise resource planning (ERP), learning management systems (LMS), enterprise portals, the next generation of content management, and Web services applications, institutions will need to commit to using these tools to pervasively reinvent processes, aggressively pursue cost reduction, and enable the

personalization of value propositions. If institutions cannot make such commitments, they should limit their investment, because they would not be able to achieve strategic differentiation from their investment in IT.

If campus leadership will commit to deconstruction and reinvention of processes, a whole new generation of stakeholder-focused services may be discovered. Consider the following possibilities: (1) differential tuition and fees based on the nature of the "experience" chosen by learners; (2) multi-semester, future-oriented scheduling plans (performance contracts) enabling students to "lock in" a schedule and price a year or two in advance—perhaps paying a premium for lock-in; (3) intrusive mentoring and monitoring of academic development to reduce attrition and lower the "total cost of completion" for students and the public; (4) block scheduling so commuter students need to come to campus one day a week—or not at all if they wish; (5) personalized variations of each course, drawing from a "buffet" of options relating to mode of learning; and (6) revised scheduling algorithms to give students the option of paying a premium for prime course hours or receiving a discount for "off-peak" scheduling. The new applications supporting these capabilities would need to be loosely coupled to existing ERP/legacy systems through Web services. These applications could be continuously, flexibly adapted. They would enable new, personalized value propositions.

Knowledge Exchanges and the "Electricity Grid"

Transforming e-Knowledge [16] describes the emergence of marketplaces for the exchange of learning objects and knowledge flows, and the emergence of *e-knowledge commerce.* The Learning Content Xchange and the eKnowledgeXchange are two emerging ventures that aim to establish content exchanges in postsecondary and K-12 sectors [17]. But to really deliver value to stakeholders, suppose institutions determined to create a sort of electricity grid for learning, where learning offerings could flow to where they were needed, based on pre-established agreements among institutions and clearly defined learning outcomes?

For example, in an underserved area like nursing, institutions in a network such as the Minnesota State College and University System (or other systems of institutions or consortia) could create online sections that could be offered as "surplus" capacity across the grid. Standards of learning and demonstrated competencies would be established at the front end. Campus settings without a nursing program could serve as learning agents for the stakeholders in their communities. As learning agents, they would commit to solving the learning needs of local learners, companies, associations, and other stakeholders, serving as learning providers, brokers, mentors, or a combination of roles. A division of tuition and fees would be pre-negotiated to create a win-win arrangement for both providers and learning agents/brokers. Those with programs could contribute to the network and/or use it to balance supply and demand. They could even participate in a nursing community of practice spanning different institutions.

Such a grid could be used for learning offerings in a wide range of other fields, as well. A campus could develop scalable learning resources using a team approach. They could prepare to offer between 10 and 15 sections, drawing from a cadre of tenure-track faculty, adjuncts, and mentors that would constitute a genuine community of practice around the course. Rather than the adjuncts commuting to three or four institutions to cobble together an itinerant living, they could be an integral part of the community of practice and be assured a reasonable employment by being able to teach multiple sections through the grid. The consistency and cost of learning would improve as well.

The grid and exchange mechanism could create a manageable, flexible surplus of supply that could be used to assure that students could get the courses they would need to graduate in four years. Supported by such an exchange, institutions could commit to multi-year, future scheduling. States with rapidly growing learner populations could mitigate the need for additional facilities and faculties by using the grid; slow-growing states could become exporters. The *New York Times* [18] recently reported that the University of Illinois cut 1,000 low-demand courses in hundreds of subjects because of financial exigency. Suppose the best of those courses were repurposed for the grid, developed by the lead faculty and a team of mentors, and offered via the grid to universities all over the world, shooting not for a single section enrolling 15 learners, but for five to ten sections of 35, facilitated by the senior professor and her mentors?

In addition, advanced content management and assessment tools could be part of the grid and used to mentor, monitor, and enhance student achievement. Web services-based tools could be developed and loosely coupled into existing IT infrastructures to create such achievement engines. Differential approaches to learning, competency demonstration, and intrusive advising

It's time to **"water where the grass is green"** and facilitate the **spreading** of these **innovations** so that they can become **systemic.**

Illustrated by Lorraine Tuson

could be used with different learners. The grid and exchange metaphor could enable a wide range of innovations, based on the notion of creating new, personalizable value propositions.

The Potential for IT Planning

Most institutions use IT planning as an exercise in developing infrastructure to accomplish simple extrapolations of current practices. Rather than enabling a new future, they extrapolate more efficient versions of current practices into the future, five years at a time. Such practices squander a golden opportunity to transform IT planning into a strategic instrument for focusing and mobilizing the innovative capacity of colleges and universities, at the enterprise level. IT strategic planning should be a continuous developmental process, not a once-every-now-and-again activity. It should be regenerative, engaging campus leadership at all levels from the top (President, CIO, CFO, Provost, Advancement, Student Affairs) to the grassroots around the organizing principals of innovation and value. And it should aim to develop stretch goals, a culture supporting innovation, and the capacity to make sound, expeditionary decisions about the selection and use of technologies.

Howard Smith and Peter Finegar suggest the immediate potential for transforming process and practices: "The perceived role of IT would begin to change as IT shifts from providing 'systems of record keeping' to providing 'systems of process and practice.'" [19] Through the fostering of innovation and creativity in the use of IT, we can move from data-centric to process-centric perspectives. And we can evolve from provider-centric to stakeholder-centric value propositions. Planning can be used to drive competitive distinctiveness and value for the institution and enable its stakeholders to develop the capacity to adapt, react, and adjust to constant change. IT planning needs to focus not only on the "change process" but the "process under change" and how it aligns to the overall institutional mission.

These new practices are emerging, today. The authors are working with a number of colleagues in different institutions to integrate these actions into a new, expeditionary approach to strategic positioning and planning for IT in colleges and universities. These new approaches combine transformational vision, expeditionary initiatives, and radical incrementalism in pursuit of personalized value propositions and new experiences. The expeditionary approach turns IT-supported initiatives into continuously evolving migration paths rather than uncertain leaps into the future.

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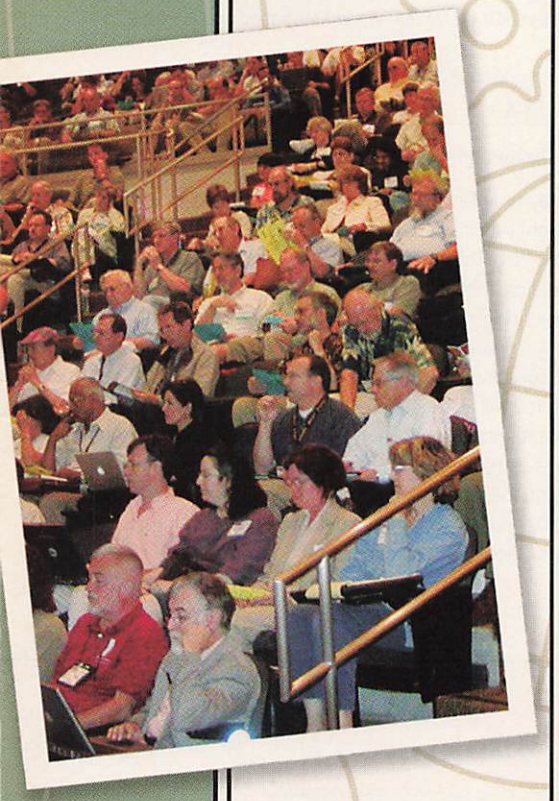

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An Introduction to Macromedia Flash MX

Tom Hall – Trainer, Software Developer/Consultant

Macromedia Flash MX is the solution for developing highly visual interactive content and applications for the Web. This tool provides one of the quickest ways of adding animation to a Web page but also can be used to create very high quality Web content. This seminar will provide the following: Product Overview, Product Resources, Product Showcase, and a behind-the-scenes look at how to use Flash MX. You will also learn about the Flash development environment and be shown how to create a variety of different animations using Flash MX. You will be introduced to ActionScript, the powerful programming environment available in Flash MX, and you will learn about Libraries, Learning Interaction Objects, and Components.

Featured Speakers

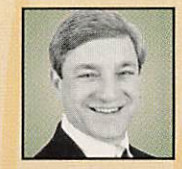
New Learning Spaces: Back to the Future

William J. Mitchell – Dean, MIT School of Architecture and Planning and Head of the Media Arts and Sciences Program, MIT Media Laboratory

Over the last decade or so, many colleges and universities have built specialized, high-tech labs and classrooms that provide and showcase the latest in learning technology. In this presentation, Dean Mitchell will argue that this is precisely the wrong strategy, propose an alternative, and illustrate this alternative with practical examples. As digital technology becomes ubiquitous, it can disappear into the woodwork. Without sacrificing connectivity or functionality, learning spaces can now be built around responding to basic human needs rather than responding to the requirements of specialized and delicate machines.

A Conversation About Higher Education and IT

Graham Spanier, Ph.D. – President, Penn State University



Graham Spanier will offer his perspective of technology integration at a major research and teaching university. A true technology president, Dr. Spanier has guided Penn State through eight years of far-reaching technology change on campus, including the establishment of Penn State World Campus, the university's distance education initiative, and a new School of Information Sciences and Technology. He will discuss trends connecting education and IT, issues surrounding the management of information technology in higher education, and how to use IT to create more student-centered universities.

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Instructional Design in the Web Space

Judith V. Boettcher, Ph.D. – Consultant, Designing for Learning

This seminar is an opportunity for faculty, faculty support personnel, and administrators to explore the key issues, technology tools, and processes for designing and delivering online and distance learning programs. The key processes include developing a framework for design, exploring core learning principles, and identifying the steps in preparing courses and learning experiences for the Web and online virtual spaces. Some of the key issues include managing administrative challenges of costs, time, and infrastructure needs for online learning such as faculty workload, training, and course development strategies.

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Increasing Institutional Productivity with a Technology Enabled Faculty

David Starrett – Associate Professor of Biology, Southeast Missouri State University

Michael Rodgers – Associate Professor of Chemistry, Southeast Missouri State

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Teaching and Learning Technologies in the Year 2015

Howard Strauss – Manager of Technology Strategy and Outreach, Princeton University

Howard Strauss will explore some current technology trends and project their implications for colleges and universities. By pondering the future of authentication, portals, course management systems, and smart classrooms, you'll be better prepared for the next big things in technology.

Knowledge Transactions: Digital Technologies and Change

Blogging, ePortfolios, and learning objects are among the technologies indicating changes in the way information is created, managed, and exchanged on campus. How will digital technology change basic knowledge transactions for higher education?

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Steven R. Acker, Ph.D. – Director, Learning Technologies Research and Innovation (TELR/CIO), and Associate Professor of Journalism and Communication, The Ohio State University
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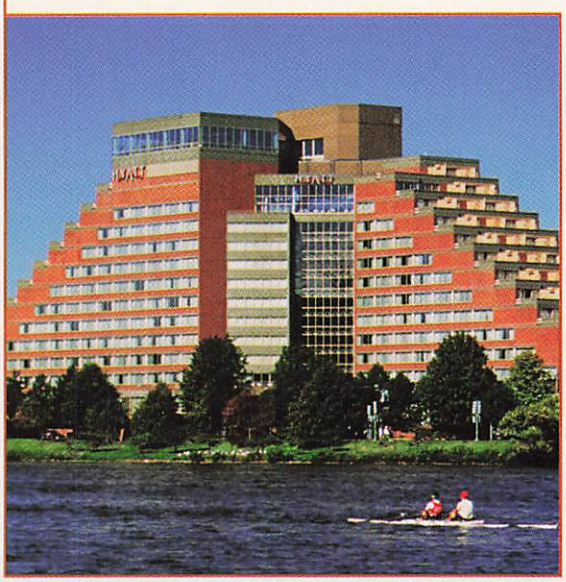

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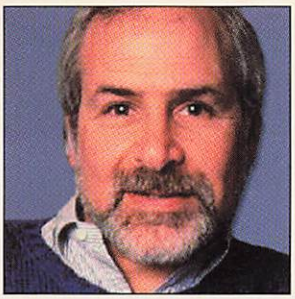

Kenneth C. Green

DIGITAL TWEED

Cleveland Is Hot

Cleveland Rocks! The Rock and Roll Hall of Fame—Rock Hall— is Cleveland's new icon and edifice, replacing the steel mills that once reflected this city's commerce and identity.

But at University Circle, some 110 blocks east of downtown Cleveland and Rock Hall, there is signal in the air. With the September launch of the OneCleveland project, this midwestern port city is now home to the world's largest hotspot for free, public WiFi.

OneCleveland is a collaborative effort of seven Cleveland organizations, including Case Western Reserve University, Cleveland State University, Cuyahoga Community College, and the Cleveland metropolitan school district. In the offing is a public, one-gigabyte network that will "serve more than 100 education, cultural, research, government and healthcare non-profit organizations in Northeast Ohio that are exploring using OneCleveland's services."

At present, the operating and symbolic center of OneCleveland is University Circle, home to Case Western Reserve University, Severance Hall and the Cleveland orchestra, and many of the city's museums. The 550-acre University Circle area went wireless early in September. Dell Klingensmith, interim executive director of OneCleveland, says that the project "intend[s] to extend wireless infrastructure services everywhere that OneCleveland touches." In time, Cleveland and the extended metropolitan area could become one huge, seamless hotspot.

For Case Western Reserve University and the large number of residential, "technology-intensive" four-year colleges and universities that do not have required buy programs, going wireless has helped to move undergraduates from desktops to notebooks. Admittedly, notebooks now seem cheap: basic laptop computers are widely available for less than $1,000. But early if anecdotal evidence suggest that the wireless network influenced the decision that many Case Western Reserve University students made this fall about the kind of computer—desktop or notebook—they bought for college.

Cutting the digital cord is a wonderful thing. Once you've experienced the convenience of wireless you may never be willing to return to the cable that binds.

Admittedly, I am—or have become—a partisan. In the interests of full disclosure, I should report that I'm spending part of this academic year in Cleveland, working on some projects at Case Western Reserve University. However, were I simply passing through as opposed to spending time, I believe I would still be impressed by what's been done and the aspirations to do more.

But let's look beyond the initial excitement about Cleveland's movement towards universal, free WiFi. The early experience of consumers, corporations, and colleges suggests that wireless, like all new technologies, presents a Pandora's box of expectations, challenges, and opportunities.

For entering freshmen or for Executive MBA students, wireless on campus (and in the classroom) is qualitatively different than WiFi at home or on the job. Among other things, wireless may raise student expectations about the role of technology in the classroom, especially among the so-called MTV generation of undergraduates.

Some faculty at wireless campuses are beginning to complain about the "sea of screens" that dominate their classes: are students taking notes, searching for content related to class discussion, doing e-mail, or simply wandering in Cyberspace during a dull lecture? Are the undergraduates bored? Are the law students and MBAs searching the Web for content (court rulings, *BusinessWeek* articles) to enhance class discussions or to ambush their peers and the prof?

continued on page 41

In his keynote at Syllabus2003, Duke law professor James Boyle described two radically different perspectives on copyright: the "closed" view, in which extensive legal protections purport to offer economic incentives to authorship; and the "open" view, which fosters creativity through less restrictions and greater flexibility in the laws that control access to intellectual property. Boyle points to the need for faculty, students, researchers, and others to be able to access and build on the ideas of others—especially when the original authors would wish it so.

Who Stole the Goose?

The law locks up the man or woman
Who steals the goose from off the common
But leaves the greater villain loose
Who steals the common from off the goose.

The law demands that we alone
When we take things we do not own
But leaves the lords and ladies fine
Who take things that are yours and mine.

The poor and wretched don't escape
If they conspire to law to break;
This must be so but they endure
Those who conspire to make the law.

The law locks up the man or woman
Who steals the goose from off the common
And geese will still a common lack
Till they go and steal it back.

—Anonymous

Excerpted and adapted from James Boyle's keynote, "The Virtue of Disorder: Sloppiness, Serendipity, and Openness in Educational Materials," given at the Syllabus2003 conference in San Jose, Calif., July 29, 2003.

Let me give you a little primer on copyright law. Every time you fix some piece of expression, in tangible form, you get a copyright on it. The notes you're taking are copyrighted, the doodle on the cocktail napkin is copyrighted, the snapshot of your dog just moving out of the frame is copyrighted. All of those things are copyrighted whether you want them to be or not, regardless of whether you make the little "C" with the circle around it, or write "all rights reserved," or anything else. It's all copyrighted the moment it's fixed.

This is a change to the law; the law was changed in the late 1970s and fully came effective in the late 1980s. It used to be that you only got a copyright if you asked for one by saying, "copyright." You actually had to say, "I assert a copyright over it." You actually had to write the little "C." That seems to me like not such an incredible imposition—to actually say that if were going to give you a legal monopoly backed by the force of the state and the FBI and maybe 120-150 years of protection, you at least have to ask for it or at least have to say that you want it. That doesn't seem to me like such an incredible burden on you. You didn't have to file anything. To be sure to enforce it you would later have to file, but just to get the right, all you'd have to do is put the little "C." Nope, we said, that's just too much. People out there, that's just too much to ask them to do because someone might write something and not realize they had to do that, and the poor folk would then lose their copyright; the work would pass into the public domain.

In 1976 this would all be fine because, to be sure, there were huge numbers of people producing things—notes that they had

The law locks up the man or woman who steals the goose from off the common but leaves the greater villian loose who steals the common from off the goose.

Illustrated by Russ Willms

on class; their presentations that they would actually show in class; their account of what they remembered of a history course they'd taken; working notes for a manuscript; some tips on how to teach calculus to 10th graders or what have you-but none of them really existed in any way where anyone else could get access to them. They were sitting in your filing cabinets. Maybe you photocopied them and sent them to a friend, but they weren't sitting there in any place where anyone might actually get access to them. So there was, you might imagine, a tiny island of works which copyright actually was concerned with, which were the ones being commercially published and thus being made available to others, and then a huge remainder of works which were copyrighted but they just sat in your file cabinet, so who cares? Yes, all your cocktail napkin doodles are copyrighted, but who cares.

But the world has changed since then, and it has changed because of the introduction of the Internet. The Internet is seen here not as something which produces this terrible threat of costless copying leading to piracy, but as that which makes available to me your thoughts on how to teach calculus to 10th graders; that nifty little graph that you have for showing fractionation in a distillation process; that beautiful animated GIF illustration of a molecule which is sitting on your course Web page; the nice song that you made; the photograph you took of the Civil War Memorial or the battlefield. You know the Internet; you know what's out there and you know how much of it is potentially of use to you.

Now can you use that stuff? You might think nervously, "Wait, I'm using it all the time; I hope I can use it. I mean, it's on the Internet, isn't it?" To be sure, the fact that people have put material on the Internet means that it is unlikely, although not impossible, that other people will then be sued for actually looking at it. This seems kind of obvious, but sadly the legal system is not always obvious.

But what about reproducing it or changing it? What if you wanted to take that module on calculus that someone had developed in Hawaii and adapt it for your students who have a slightly different curricular background? Or what about that molecule? Maybe you like the GIF animation but you think you can tweak it to make it even better, or maybe you just want to reproduce it and put it in some materials... Can you do it? You say, "Well, I need to find the author and get permission in a legally binding document, so who's the author? I don't know; it's up on this Web page of 27 different people and all their e-mail addresses are broken. How do I actually get access to this stuff?"

The tragic thing about the Internet is that our new system of copyrighting everything the moment it's fixed, not requiring anyone to say anything, means there are vast numbers of people—and educators are the best example—producing things that they affirmatively want to share, putting them out there, and having other people say, "I just don't know if I'm allowed to photocopy this to my class. Every time I think twice about that. Every time, I try to contact you, send you an e-mail, get your permission when you in fact never wanted to copyright the thing in the first place or at least are perfectly happy for me to reproduce it." That is a loss, a social loss, every bit as real as the loss suffered when someone pirates a song. It's a loss from failed sharing, a loss from failed collabo-

ration. It doesn't mean we should give up on fighting the losses from piracy, but it means we should counterbalance that by [considering] other kinds of losses that are produced when we have a system so ill-tuned.

I'm involved with an organization called Creative Commons which, if you look on the Internet under Creative Commons [www.creativecommons .org], or just Google that, you'll see what we do. We try to provide a second-best solution—and by the way this is just an example of how private individuals can try to ameliorate the situation, particularly for educators, so that those of you who are actually producing stuff that you do want other people to use can offer it to the world under the conditions that you want. Maybe you want to forbid commercial use but allow any non-commercial use. Maybe you want to say that anyone can use it in any way but your name has to be attached, or maybe you want to say that anyone can use it but only in its entirety. Or maybe you want to say you can even make derivative works; you can change it but if you do change it I want you to change it under a license at least as generous as the one as I gave you so that other people can build on it in the future. All of those possibilities exist, and you pretty much go through and pick your license. We then produce a license which is not only lawyer readable... [It] actually is explained in terms that human beings understand as well and, more interesting perhaps, machine readable so that in the future you'll be able to go into Google or all the Web and [find] all illustrations on the history of the Eiffel Tower that are available for non-commercial use with attribution. The point is that there was a problem here and we attempted to deal with it.

Where does all of this leave us? I think we are really actually trembling on a cusp here... we have, academia in particular, long dominated by the values of Mertonian open science, free exchange, free speech, access, and so forth. We have on the other hand increasing pressures to close things up, to wrap things in tight technological boundaries, and we have vast numbers of new legal initiatives. What's more, the largest defense against these new intellectual property rights up until now was popular ignorance, incomprehension, and ridicule. It used to be if someone said, "you can't quote some fragment of what I'm saying because I copyrighted it and you can't quote it," then people would say, "don't be ridiculous." I'm actually worried that that tendency is being weakened as people become more and more familiar with end user licensing agreements, point-and-click restrictions, and limited institutional understandings of fair use.

It's a loss from failed sharing, a loss from failed collaboration.

Recently I was writing an article in which I quoted a 300-year-old poem about the enclosure of the English commons, the area of arable common land which was enclosed into private plots by the state, handed over to a single landowner who it was assumed would then use it more efficiently. The poem said, "*The law locks up the man or woman who steals the goose from off the common but leaves the greater villain loose who steals the common from off the goose.*" Meaning that this was a little unfair that this legal intervention changed into a crime [accessing] that which had been the common property of all of us. I thought, this sounds like we're in the middle of a second enclosure movement- and I wrote an article with that title.

In the process, as a good academic I was trying to track down the poem, which was written by that annoying poet Anon. and which had of course 15 or 16 spurious and impossible-to-verify provenances given on the Internet in addition to about 5 or 6 different ones in the scholarly literature. I sent an assiduous research assistant to track it down, and he found a whole lot of people who quoted the poem. He sent e-mails to about 15 or 20 people saying, "I notice you quote this poem and you say it dates from [and then different stories]. I just wonder, where did you find that information?" Of the 20 people he wrote to, 12 wrote back immediately saying, "I'm very sorry and I'll take it down immediately." One institution, a newspaper, wrote back and said, "We are horrified at this and the reporter responsible has been disciplined." He wrote back to them [all] saying no, your *source*—meaning why did you think that it came from there. "I'm just interested, I'm not asserting any rights over it; I just want to know why you said this." Five of them wrote back saying "Look, we've taken it down, please don't sue us." The assumption about inquiries in the world of scholarship is now one in which you are as likely to be asserting actual ownership as you are to be inquiring about intellectual provenance. That I actually think is a tragedy; it really is a tragedy. It is a tragedy of a lost commons—not the tragedy of the commons but the tragedy of a lost commons.

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To listen to the complete audio recording of James Boyle's July 29, 2003 keynote, visit www.syllabus.com/pconf/

Master Planners: Faculty Development

AS TECHNOLOGY BECOMES MORE IMPORTANT TO THE INSTITUTIONAL MISSION, FACULTY DEVELOPMENT PROGRAMS MUST ASSUME A MORE CENTRAL ROLE IN IT PLANNING

David A. Starrett and Michael L. Rodgers,
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Illustrated by Tom Nick Cocotos

The advent of the World Wide Web stimulated unprecedented technology spending by universities worldwide. Unfortunately, poorly-coordinated combinations of grants, gifts, and politically-motivated government funding led to fragmented technology implementation. Costly hardware and software installations may have provided good feelings and marketing hooks to attract students to "cutting-edge" learning environments, but beneath the high-tech glitter were some ugly realities: the technology was poorly integrated into existing teaching and learning practices, there was little coordination with institutional goals and values, and faculty generally lacked the skills to use the technology effectively.

The fragmentation led to intramural installations of incompatible systems, or multiple systems that required inefficient retraining of students using the systems in different departments on campus. Strategically, fragmented implementations prevented institution-wide realization of Web-based technology's promise to enhance access to university education, especially at the undergraduate level. To many, technology was a solution looking for a problem.

With expensive but rapidly aging technology in place, some institutions saw the incongruity between lavish technological resources and minimal faculty skills as the chief obstacle to realizing improvements to teaching and learning through technology. Numerous development models were implemented to close the faculty skills gap and ultimately to validate the investment in technology for teaching and learning.

Indicators, such as the number of online courses and programs now being offered, show that the faculty did benefit from the efforts. However, some faculty continue to look askance at technology, citing the lack of agreement on how technology use should count in tenure and promotion decisions, unresolved intellectual property issues, the still-steep learning

curve for teaching with technology, and a general lack of faith that online instruction is "as good as" face-to-face instruction. Perhaps the most powerful driver of efforts to assess technology's impact on teaching and learning is the need to respond to these concerns.

Knowing Technology's Place

Faculty development offices now routinely offer technology training. Campus committees deliberate technology's value in tenure and promotion, and intellectual property now sparks lively debate. Research into assessment is beginning to reveal new insights into the ways people learn that may benefit both face-to-face and online instruction. The dot-com decline has encouraged a more sober approach to technology funding, a trend made more urgent in public institutions by the budget crisis facing most states.

For people who like action, planning can be a chore; for dreamers, a delight.

As we move away from the chaotic 1990s when technology was "new", it would be tempting to conclude that there is now less reason to plan for technology; the focus should be on realizing plans already made or planning for better use of the technology on hand. In truth, however, new technologies, reduced base funding levels, continued earmarked funding, and rapidly changing faculty skills, compel faculty developers and administrators to carefully and continually plan for technology.

The many models for faculty development vary with campus size, mission, and organizational structure. For many, it is a centralized faculty development office or center. Localized offices in schools, colleges, or branch campuses may complement this. Other models feature decentralized offices or a division of faculty development components among different units.

Faculty development in the area of technology-supported teaching may see technical training offered by the IT department while pedagogical aspects are presented by a teaching and learning center. Delivery methods include workshops or institutes ranging from multi-week to short single topic sessions, either face-to-face or online, as well as faculty mentors and communities of practice. In all cases, the goals are to connect faculty to new technologies and importantly, to promote effective use of these technologies in support of teaching and learning.

Strategic Planning as a Tool

A major shortcoming of faculty development programs during the fat years was the failure to make the case that the pedagogical aspects of technology use were more important than the technical. This failure probably came about innocently; without the creation of a tech-enabled faculty, the pedagogical implications were difficult to convey, contributing to the notion that technology was a solution looking for a problem. Those looking to technology to transform teaching and learning would do well to link technology solutions with real problems recognized by faculty and administrators.

An often-overlooked but potentially valuable way to do this is through careful study of campus strategic plans. Strategic plans can serve as tools for reconnaissance, allowing faculty developers to locate pockets of expertise, determine skill levels, discover faculty wishes for technology, uncover technology misconceptions held by faculty, or identify problems that block successful technology implementation. Strategic plans also highlight areas deemed important by the campus and provide justification for resource requests, approaches, and scope.

Strategic plans can provide thoughtful and comprehensive coverage of both challenges and resources. But wise planners know that "stealth resources" exist, and that those resources become increasingly important when budgets are distressed. Early adopters represent just such a resource. They tend to be forward-thinking faculty who understand the technology and grasp its implications for supporting or enhancing teaching and learning. Alone, the faculty will use technology to improve their own courses, but working them into campus-wide technology planning can leverage their skills to improve many courses.

Integrating early adopters into faculty development makes sense in at least three ways: as faculty, early adopters enjoy credibility among fellow faculty; early adopters are economical because they are already on campus; and early adopters already possess enthusiasm for the technology being promoted.

Finding Campus-Wide Support

Strategic plans and latent resources such as early adopters can vitalize technology planning, but money and political capital are equally important. Wise planners recognize that effective faculty development programs require coordinated efforts to plan, develop and implement. Along with financial support in the form of budget lines, one-time funding, grants or other sources, political support from administration and faculty is crucial.

The IT department or an information technology committee may provide necessary technical support, while pedagogical substance comes from the academic side, ideally from a campus teaching and learning center or equivalent. An office of instructional technology may also provide a good blend of the technical and pedagogical support needed for effective integration of technology into the teaching and learning process. Positioning early adopters on technology steering committees can bring expertise to the planning process, while securing the political advantage of offering faculty development programs designed by the faculty themselves.

A truly effective faculty development program is optimized to take advantage of new technologies, but the fast pace and unpredictability of change makes it difficult to gauge the value of every new technology. Ultimately, flexibility is the key. Planning for change is as important as planning *the* change. A lock and key

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approach where the basic characteristics of new technologies are defined and appropriate responses are in the ready may help. Such generic planning asks what makes a technology new. Take information literacy for example. Most new technologies involve increased or additional forms of communication and information exchange or retrieval; all key components of information literacy. Making the assumption that future technology advances will further support information literacy would enable faculty developers to rapidly implement the new technology with that aspect in mind.

The Benefits

The benefits of effective faculty development include the incorporation of specific technologies into the campus culture. A campus without effective faculty development programs may see pockets of success; a campus with such programs will see a more homogeneous, collegial transformation of the campus and culture.

Assessing the impact of the program can be difficult. A technology-enabled faculty can indicate a campus transformation. Quantitative data can be found in workshop or institute satisfaction and attendance, declining training costs, and support call and contact numbers. Student and faculty surveys as well as impact on student ratings of instruction or increased use of technology also can provide more qualitative data. Numbers of Web-supported or Web-based course offerings, and enrollment, retention and satisfaction in these technology-enhanced courses, are good indicators of the impact faculty development has on their effectiveness in using technology to support teaching and learning.

The quality and sophistication of technology-based teaching materials used on campus are very good indicators of effective faculty development if we assume that the pedagogical aspects are at least as important as the technical. Lastly, a technology-enabled faculty is demonstrated by the increased inclusion of technology in campus strategic plans; faculty attendance and presentations at IT-related conferences; participation in IT committees and discussions on campus; IT-related purchases and infrastructure formation; interest in the place that IT-related work has in promotion and tenure decisions; and promulgation of standards for instructional Web pages on campus.

Return on Investment

An assessment of the impact of information technology on campus takes on even more importance when examined in the context of a return on investment. The investment in people, equipment, and time must be weighed against the program's outcomes. Does the creation of a faculty development program in IT lead to measurable improvements, changes or alterations in the campus culture? Is this campus transformed, and if so, was the cost reasonable?

Return on investment is sometimes difficult to calculate. An ROI takes into account qualitative as well as quantitative changes. Changes in faculty productivity or impact on student learning may be good indicators. The ubiquity of a specific technology may be a marker of a good ROI. While certainly the cost of the technology, the training, and the maintenance can be calculated, quantifying the return in the context of dollars is not as easy.

For people who like action, planning can be a chore; for dreamers, a delight. But preferences aside, planning now for tomorrow's technology makes sense, especially in light of the complexities inherent in the technology itself and in the challenges associated with making technology beneficial to teaching and learning. Identifying the problems and marshalling the resources to solve them are at the heart of planning, and as technology becomes more central to the university's mission and culture, planning for technology is one way that the faculty developer can assume a central role in the life of the institution.

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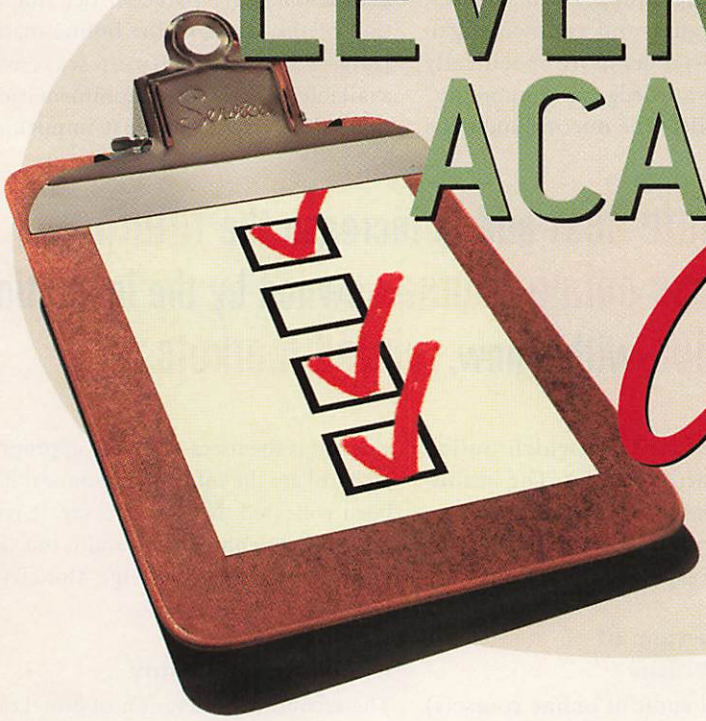

By Evan Robinson, Shenandoah University

> If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle.
>
> —Sun Tzu, *The Art of War*

The literature is full of strategies, some complicated and some simple, for maximizing the return on IT investment, especially for online offerings and related course materials. Some advocate minimizing expenses and taking advantage of outsourcing opportunities, while others propose using a SWOT (strengths, weaknesses, opportunities, and threats) analysis approach to success. Why not draw on the 2,500-year-old wisdom of a master strategist to help us with our modern battles with IT planning? *In The Art of War*, the ancient Chinese philosopher Sun Tzu advised that it is important to "know the enemy and know yourself." And while IT planning is thankfully not a real battlefield, the stakes are high enough to give these words some thoughtful consideration.

Knowing Yourself

The first consideration in Sun Tzu's advice is knowing yourself. You should put your initial focus on one thing, and that is understanding your institution's potential. Determine the breadth and depth of the online assets your institution has available. Significant opportunities may already exist that lie unrecognized within one program or one school. It is possible to improve your institution's return on investment for online offerings by identifying what is already available that can be taken to market quickly, with little or no preparation. This process is called an *internal audit* and is conducted in order to identify online materials that can be reused or repurposed to other markets without the commitment of significant resources.

Why Conduct an Internal Audit?

Often the development of an online program is undertaken for one particular use and with a specific audience in mind. This presents a challenge when trying to improve the return on investment, since the expense to develop the course is only spread over one audience and a limited number of uses. One way to decrease the aggregate cost and to increase the return on investment is to identify the various online courses owned by the institution and try to promote their application within new, related markets.

The challenge to doing that is that specific online offerings have most likely been developed within a particular school or college on campus. Take for example, an online hybrid course in Research Methods developed by a faculty member in the School of Pharmacy, complete with notes, slides, and audio. The opportunities for other uses of this course are often overshadowed by the simple fact that no one outside of the School of Pharmacy—or for that matter even within the school itself-knows the course exists.

Unfortunately, within higher education a communication problem exists whereby there may be limited awareness of the unique and innovative things our colleagues are doing. This is not a criticism, but rather an acknowledgement that faculty and administrators are usually busy with the myriad of activities associated with their own teaching, research, and service commitments. By raising awareness about online offerings at the institution in general, it may be possible to increase the return on investment through reuse and sharing. The key is to identify the existing online content and determine how it is being used, how well it is being used, and whether it can be used in other ways.

In any business it is imperative that inventory is accurately accounted for in order to ensure that the business has what the customer is willing to purchase. Applying this idea shifts the nature of academic inventory from faculty, research, grants, and endowment to online knowledge, more specifically creating a "knowledge as commodity" business model. The internal audit is a product inventory in which online courses are accounted for. The institution attempts to determine the value associated with its most valuable asset, the collective expertise of its faculty.

One way to decrease the aggregate cost and to increase the return on investment is to identify the various online courses owned by the institution and try to promote their application within new, related markets.

The Challenges of Looking Within

The internal audit of online course(s) and other content covers diverse sources including distance and continuing education, onsite courses, and other related online content. It can be broken into three categories: (1) content currently taught online via distance education, (2) content currently taught online to onsite students, and (3) potential online content. In order for an internal audit to be conducted efficiently it will need to be championed by someone within the central administration. This will ensure an institution-wide view of what is available; plus, it will promote centralized coordination of the use of the online materials in a way that will guarantee appropriate rewards to the colleges, departments, and faculty involved.

To conduct an internal audit it will be necessary to create forms and most likely a database that allows for the appropriate gathering and analyzing of information. Sources of information for the audit can include, but are not limited to, the undergraduate and/or graduate course catalogs, the Office of the Registrar by virtue of reviewing course codes, outreach materials and catalogs, and interviews with faculty and college or department administrators. As the internal audit is conducted, some degree of personal interview may be necessary to get a better determination of the status of the online materials. Since a variety of ways are available to organize the information that is collected, the most important element is the users' ability to appropriately collate the information once it has been collected. Needless to say, it will take time to conduct the audit, but the benefits will far outweigh the challenges of doing the work.

Knowing the Enemy

The second consideration of Sun Tzu's statement, about understanding the enemy, or in this case the marketplace, is a necessity though somewhat beyond the scope of this article. But unless you know what is at your institution's disposal, it will never be possible to fully understand market potential. Spend the time to ask the questions and explore within your institution, as opposed to merely responding to external market pressures.

When an audit has been completed, it may be possible to use the same process to review new courses or content that becomes available as well as using it to decide which materials should be brought online. And once you know your inventory, you can make better strategic plans about how best to position your institution's offerings with respect to the rest of the marketplace.

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MIT and UPV ▪ Douglas Morgenstern, Adolfo Plasencia, Rafael Seiz

Students as Designers and Content Creators:
An Online Multimedia Exchange between the U.S. and Spain

- **MIT** and the **Universidad Politécnica de Valencia** in Spain communicate and exchange ideas in a virtual community.
- **University of Arizona** students interact real-time in a new distance learning program.
- **University of Dayton** installed a high-speed intrusion prevention system blocking malicious traffic to illegal P-to-P networks.

Foreign language teachers use the Web as a simulated immersion experience, so students can access authentic language and images. Many educators concentrate on providing paths for students, or equipping them with enabling strategies to find useful paths themselves, through the vast quantity of Web pages available. This solution favors reception, since the learner essentially collects, rearranges and analyzes extant material.

An alternative is to create a mechanism where the learner produces content as well as decodes it, and one means to this end is a Web-based virtual community. Since Fall 2000, students learning Spanish at MIT and their counterparts studying English and other subjects at the Universidad Politécnica de Valencia (UPV) in Spain, participate in the MITUPV Exchange (http://mitupv.mit.edu)—a bilingual virtual community where students communicate each semester by means of bulletin boards, photos, and online video. There has been additional participation by smaller groups of students from Cambridge University (UK), the University of Texas, Austin, and other universities in Spain and Latin America. More than 900 community members have registered, including several students from other European countries and Asia who learned of the project through a Wired News article from November 2002 (www.wired.com/news/school/0,1383,56082,00.html).

Photo by Adolfo Plasencia

From virtual exchange to real visits. (Left to right) UPV's Ferrán Soriano and José Manuel Gómez with MIT graduate students James Patten and Carlos M. Rita Gertrudis next to a sculpture made from recycled computer parts at the UPV.

Focus on College Life

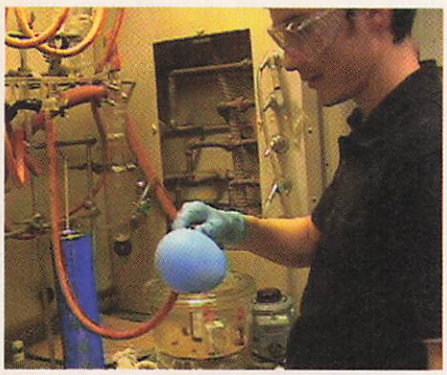
Most college students are extremely interested in analyzing, critiquing and communicating their own university experiences and comparing them to those of their counterparts in other places. The MITUPV Exchange offers a structure for students to compare various facets of their experiences and while doing so, acquire additional linguistic and cultural knowledge. The principal Web page category is "university," which offers the sub-categories of: Academics, Extracurricular activities, Athletics, Majors, Residences, Social Life, and Traditions. Within each category the user can choose a bulletin board, a series of links to other Web pages, or a multimedia section. The content of the photo or video ranges from a visit to a lab where students conduct experiments or build machinery, a glimpse of a party, campus concert, or poetry reading, to tours of an apartment or residence hall. Other community members post text comments to these media objects.

Most of the content is provided by students. The pedagogical emphasis of the project, mainly provided by the students, lies in the need for representation and interpretation. Both English and Spanish are used throughout the Web site; students' use of their native language is for the benefit of their counterparts in the other country. Students represent their own identities in various dimensions: national, ethnic, religious, educational, and career. From this complexity of representation emerges a phenomenon we might term "fuzzy identity." Students represent their college and

its particular culture, and interpret the representations of others as well.

"Multimedia and the Internet enable learners to find a voice for themselves at the intersection of multiple time scales, to represent their own version of reality through multi-modal texts, and to confront a broad public audience with that reality. It remains to be seen how foreign language pedagogy will adapt to such a paradigm shift." (Kramsch)

Through use of the project, students become aware that they need to take into account differing culturally-based perspectives of the "other," and cannot assume that university systems, living arrangements, and expectations regarding friendship and family are easily translatable. Engineering students in Spain ask why MIT students take humanities courses. The mixture of engineering and humanistic content on a single Web page is an innovation for Spanish universities, where courses and careers are generally compartmentalized. Spanish participants are intrigued by the "hands-on" approach typical of MIT engineering courses, where design contests and competitions are heralded events.



MIT undergraduate Michael Wongchaowart shows his chemistry experiment.

In post-use evaluations some students favor expanding the base to include more universities, while others prefer the more personalized feel of a smaller virtual community, with 100-150 students participating during any given semester. The multimedia aspect of the project creates norms of online behavior distinct from other online text or graphic avatar-based communities, where characteristics such as gender, age, ethnicity, and appearance can be ignored, changed, or masked by anonymity or invented personas.

Designed by Students

The MITUPV Exchange was programmed as a class project by two MIT undergraduates who took a course called Software Engineering of Innovative Web Services. The open software-based design (built on ArsDigita; cf. Greenspun). The open software-based design is utilitarian, functional and robust, although not intuitive for all users. There are provisions for continual uploading, downloading, automatic archiving, and for administrative access for the removal or correction of text entries in both English and Spanish. Some desired features, such as search functionality, within each subcategory, —archived uploads are simply listed by date of posting under "view all."

Centrality of Video

Online video is one of the most appealing features of the project, and again, students play a central role. At the Universidad Politécnica de Valencia most of the time, faculty is responsible for all stages of video, from shooting, to editing, compression and uploading, with one group working with Mac-based facilities and another, English students working in a PC-based lab. At MIT the same procedure was followed, with the teacher undertaking all production and post-production with Mac equipment. Students have taken over the first stage: they borrow a MIT-owned digital video camera and shoot in places off limits to the teacher, thereby achieving more authenticity.

Video can provide rich context as well as sound and movement, and for these reasons is well-suited for the transmission of cultural and linguistic information. Nevertheless, because the project does not include streaming video, reception is the limiting factor, and the Universidad Politécnica de Valencia needed to upgrade student-accessible online infrastructure to accommodate the project. Broadband access is required for reasonable download times, since files size currently averages around 15MB. Apart from the specific value of this project, the video archives document several years of student life and perspectives unavailable from other sources.

MIT student Sarah Mendelowitz introduces preparations for mechanical engineering contest.

Support for MITUPV Exchange was provided by Foreign Languages and Literatures and the Class of '51 and '55 Funds for Excellence in Teaching and the Class of '72 Fund for Educational Innovation at MIT; infrastructure support at the Universidad Politécnica de Valencia was provided by the Escuela Técnica Superior de Ingeniería del Diseño (ETSID) and the Office of Justo Nieto Nieto, Rector.

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The expanded version of this article can be found online at www.syllabus.com/article.asp?id=8293

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University of Arizona ▪ By Mark Zupan

A Virtual Classroom Experience

For students in the Tucson classroom, their counterparts in Silicon Valley appear almost life-size on a curved screen situated across the front wall of the classroom. Remote students interact real-time with life-sized images of both the instructor and their distant classmates. Professors have the ability to switch the video conferencing system to "lecture mode," sending the image of the Silicon Valley students to the rear wall, behind the students in the Tucson classroom.

The Eller College of Business and Public Administration at the University of Arizona implemented a distance learning program to build a model that would utilize modern technology and provide a more virtual experience for the students and professors.

It was the university's first experiment with distance learning technology, and in pursuing the venture, we wanted to avoid a traditional Web-centric distance-learning program where students complete course work on their own time and in isolation. This approach is effective in that a student across the country can complete the same course work and read the same material as his or her counterpart on-campus, but it lacks the collaborative, interactive and team-oriented approach that Arizona felt was a crucial component to the business school experience.

The experiment launched with an evening MBA program jointly offered to students in Tucson and Silicon Valley (the latter through a TeleSuite system at the 3Com corporate headquarters in Santa Clara, taking advantage of the system in off-peak hours).

The physical space of the classroom is designed so that students in Tucson sit in tiered rows a moderate distance from the front wall, connected real-time to Silicon Valley by a high-speed wireless network. Live microphones are distributed to cancel echoes and several cameras are mounted inside of the walls and ceilings throughout the room to create an illusion of direct eye contact between all participants. Overhead lights are positioned to illuminate participants' faces and lights are temperature-controlled. The Tucson-to-Silicon Valley link is managed centrally through TeleSuite. Video, data, and voice are transported via a T1 line, allowing for instant, real-time visual and audio communications.

Instructor viewing on-site and remote students.

The system has paid for itself with the increase in student enrollment generated from the new distance learning program.

The program is designed to give students an immersive, interactive, and lifelike experience. Classes are held in the evenings, meeting once a week as part of a 22-month long course of studies. Class sizes range from 28 to 30 students with approximately one-third of those students participating remotely through the TeleSuite system. To date, two classes have graduated through the program, with a third in its second year.

Most importantly, students that live and work in Silicon Valley can enroll in Arizona's MBA program and feel that they belong to a group of students who are all going through the same experience at the same time. The most frequent comment received from our students is that the experience is as close to being there as possible.

The system has paid for itself with the increase in enrollment generated from our the new distance learning program. In fact, the University of Arizona is now considering investing in a classroom with the newest version of the technology, allowing more seats, larger screens, and even better video resolution. The virtual classroom solution has made the evening MBA program more visible, raising our status with key decision-makers on campus.

The virtual classroom has provided the Eller College a high-quality and efficient means to integrate guest speakers from distant locations into the classes, conduct interviews for prospective staff members, enhance relevant college attendance, and bring more recruiters to Tucson (virtually).

Mark Zupan *(mzupan@eller.arizona.edu) is dean of Eller College of Business and Public Administration.*

University of Dayton ▪ By Thomas Danford

Blocking Cyber Attacks, Increase Bandwidth

Founded in 1850, the University of Dayton is the largest, private university in Ohio and one of the top 10 largest Catholic universities in the United States. The university has over 70 academic programs for its 10,000 students, and is one of the most wired campuses in the country. All university housing is connected for high-speed Internet access, and all students are required to own computers.

The Problem

Like most universities, University of Dayton needed to provide open network access to students, faculty and staff. This type of exposure makes it almost impossible to stop attacks, such as Code Red and Nimda that bypass the firewall on port 80 and other well-known ports. In the early stages of the Code Red worm spreading, it was discovered that as few as five infected machines could overwhelm the core campus router. This was further complicated in that there was no way to determine if the network was under attack. The only valid strategy of blocking attacks was to apply patches before a server or workstation—allowed on the network.

Additionally, file sharing is prevalent with students using Peer-to-Peer applications to download copyrighted music and video files. This can cause legal and security risks as well as absorb significant bandwidth. University of Dayton estimates that they received a dozen letters per month threatening legal action for piracy.

The Implementation

The University of Dayton installed TippingPoint Technologies' UnityOne Intrusion Prevention Appliance, a high-speed intrusion prevention system that blocks malicious traffic and illegal P-to-P files on the network. We immediately viewed attacks being blocked on the security management console's attack log. Since the implementation in early 2003, the university estimates that more than one million worms, viruses, and attacks have been blocked each month. The Digital Vaccine service, which allows administrators to download new security filters to the system to protect against the latest vulnerabilities, buys administrators additional time to patch their systems.

University of Dayton's Network Systems and Security Officer Ronnie Wagers said, "The UnityOne gives me peace of mind. I am no longer comfortable with the idea of running our perimeter defense without it."

The intrusion prevention enables customers to block P-to-P traffic uni-directionally or bi-directionally. The University of Dayton chose to allow students to be able to retrieve shared files from outside the university network, but blocked people outside the university network from retrieving shared files located within the university. With the implementation, reports show over 1 million shared files are blocked per month, augmenting the organization's bandwidth availability. Results from the University of Dayton show that after blocking P-to-P traffic uni-directionally, bandwidth consumption dropped from a peak of 30Mbps to a low of 17Mbps within the first 30 minutes, giving a 43 percent increase in bandwidth availability.

Value Proposition

Organizations can greatly increase their security and bandwidth availability while reducing the legal risk of piracy by blocking P-to-P file sharing applications. TippingPoint's Peer-to-Peer Piracy Prevention feature is included in all UnityOne Intrusion Prevention Appliances and Systems. The system performs deep packet inspection through Layer 7, providing immediate protection against known threats and vulnerabilities.

The cost savings from avoiding an attack could easily reach well into the six-figure range. When calculating return on investment from an intrusion prevention solution; administrators should take into account the time required to patch a system and reboot, the time required for emergency patching (the same day as a vulnerability or exploit is published), remediation time, time to test to make sure the machine is fixed, the opportunity cost of what tasks are neglected due to remediation, decreased productivity, overtime charges or outsourced staff expenditures required to fix the infection, and damages caused from the actual attack.

All of these factors would be multiplied by the number of infected machines, which can range into the hundreds or thousands depending on the size of the organization. Our intrusion prevention system has proved to be a good investment

Thomas Danford *(tdanford@udayton.edu) is associate provost and CIO of University of Dayton.*

FEATURED PRODUCT ■ EUDORA E-MAIL CLIENT

Eudora: Original E-Mailer Stands Tall

Back in the days before Microsoft Outlook, there was Eudora. Designed by an academic and named for a literary icon—Eudora Welty, for her story "Why I Live at the P.O.—Eudora has long been a sentimental and technological favorite, especially among early users of e-mail, academics, and those who appreciate innovation. Eudora was the original e-mail client, a program that allows someone to open, read, and manage e-mail.

Outlook and other e-mail client programs have long since emulated Eudora's original ingenuity. However, Eudora, now in version 6.0, continues to improve its feature set. Version 6.0 offers several unique additions that make Eudora a powerful e-mail manager.

First, it is the only e-mail client currently offering a spam filter. Eudora's "SpamWatch" screens incoming mail for

obvious and not-so-obvious signs of spam, shipping the unwanted e-mails to a junk mail box. The mailbox is preset to empty its contents every thirty days. However, users can adjust that setting to delete the mail as frequently as they choose. SpamWatch "whitelists" the user's address book, according to Bill Ganon, vice president of Eudora Products Group. That means that e-mail from anyone in the user's address book is automatically admitted into the mailbox. The "whitelisting" feature creates a starting point for junk mail filtering. Users can then opt in additional senders as the need arises. Of course, SpamWatch's system is not foolproof; users have to periodically check the junk mail box and "unjunk" those messages and addresses that they want to retain. Says Ganon, "With Eudora, the "unjunking" and adding to the address book can be done in one simple step."

Eudora also offers a "Content Concentrator," which aggregates the content from an e-mail thread, clustering the heart of the conversation and moving aside all of the "to" and "from" lines and redundant text. According to Ganon, the Content Concentrator allows users to quickly preview their mail without having to scroll through a long chain of repeated content. If a user wants the full e-mail text back on the screen, he or she need only to double click and it reappears.

Finally, Eudora 6.0 features something called Contextual Filing. This allows the user to quickly and accurately file an e-mail by right clicking on a word within a message. That click sends the e-mail to a folder or mailbox with that same name. The one-click solution has the potential to eliminate a lot of time wasted on pull-down menus and multiple commands.

Content Concentrator and Contextual Filing are designed to facilitate better e-mail management for the busy professional who receives dozens or hundreds of e-mails a day. SpamWatch makes sense for any e-mail user weary of the bombardment of unwanted advertising hitting their inbox every day.

Eudora 6.0 also offers something called "Mood Watch." This feature, essentially a smart dictionary, alerts users when incoming e-mail includes incendiary language, or flames. It also warns the user that something he or she is about to send may include offensive language. It doesn't stop you from sending it or block flaming e-mail; it simply identifies it. Mood Watch uses a rating system: one to three chili

peppers, depending on the e-mail's "temperature."

Other features in Eudora 6.0 (some of which were available in earlier versions) include new toolbar icons, the ability to drag and drop attachments between the desktop and e-mail, in-line spell checking, color labeling for sorting mail, and a "personalities" function that lets users create various names for different types of e-mail they send.

Unlike Outlook, Eudora doesn't come prepackaged with operating systems or other software. You have to download it. Why buy Eudora when you can get Outlook for free on most PCs? Ganon points to Eudora's reputation as an "efficient, hard-working e-mail client" and its "powerful search and filtering capabilities."

However, using Eudora doesn't mean you necessarily have to pay for it. Eudora is actually available in three versions: Paid, Sponsored, and Light mode. Paid mode is feature rich and includes everything Eudora has to offer. It sells for under $50.00.

Eudora Installer downloads the program in a free version called Sponsored Mode. Users simply follow instructions during installation to purchase Paid mode. The sponsored version includes all of the Paid mode features except for Spam mode. Using it requires permitting an ad window to appear on your screen and up to three-sponsored toolbar links. Also, in Sponsored mode, users do not have access to person-to-person technical support.

Light mode is also free, but does not include Mood Watch, SpamWatch, or Content Concentrator. It also lacks several other features, such as live spell checking, automatic completion, and advanced filtering and search functions.

*In 1991, **Eudora** became a division of Qualcomm. For more information about Eudora, contact the company at Eudora Division of Qualcomm, San Diego, Calif; (800) 2-EUDORA; www.eudora.com.*

EDUCATOR'S REVIEW ■ RICHARD S. ALVAREZ, HOLLINS UNIVERSITY

Hollins University: Backup, Recovery, and Restore

As we all know, our information systems are only as good as the backups we keep. And unfortunately we often don't realize until a catastrophic event occurs that our backups have been misplaced, saved on defective media, or incorrectly configured. As IT professionals, we live every day with the knowledge that if our institution's enterprise system were to suddenly and unexpectedly have no historic data, it would indeed be a disaster.

Hollins University has been struggling with how, when, and where to store backups of key systems for years. In the past 15 years, we have tried as many as 20 different backup solutions. Each system had its operational benefits and drawbacks, but none met all our needs. This, coupled with the problem of technology becoming obsolete, led us to seek a data backup and recovery solution that could meet the needs of the entire university. We have converted our computer operations to an enterprise system and were looking for a way to backup the entire system seamlessly. And because we are under the same budget constraints as other educational institutions, the solution had to be cost effective and not capital intensive.

At Hollins University, we recently consolidated data backup for the entire university to DataGuardian, an automatic, online backup and recovery service from IPR International (Conshohocken, Pa.). The solution has required low startup costs and few personnel resources.

DataGuardian automatically captures data from our servers, then compresses, encrypts, and transmits it via the Internet to a secure vault in one of IPR's remote locations. As each scheduled backup occurs, the DataGuardian agent recognizes the addition of new data or changes in previously stored data. After the initial "seed," only new or changed data is captured, encrypted, and transmitted to the remote vault.

One of the best features of DataGuardian is that it allows us to instantaneously restore single files or even a complete server through a web-based point-and-click front end. This has significantly reduced the amount of time computing services personnel spend locating and restoring lost files. We recently experienced a system disk failure in a key system, but restoring the server was quick and painless.

Another key feature of the DataGuardian system is that it requires very little bandwidth. We made the initial seed of data directly to an IPR vault. The subsequent delta backups, which capture only new files or the part of the file that was changed or modified, reduce the amount of bandwidth we need as well as the time it takes to run the daily backups. We estimate that our backups are taking less than half the time they did before we switched to DataGuardian.

The backup runs in the background and can throttle back if demands on the server increase, so our users don't notice any system slowdown during backups.

At Hollins, we sleep a little better because we know our servers and desktops—and the software that runs them—are backed up regularly to a secure, offsite location. We've stopped worrying about individual university personnel remembering to backup their computers, and we've reduced the amount of time computing services spends resorting lost and corrupted files. In all, I think we've made great strides in backing up the critical information at Hollins University.

***Richard Alvarez** (ralvarez@hollins.edu) is chief technology officer for the Office of Computing Services at Hollins University.*

Syllabus 2004

July 18 - 22, 2004, Hyatt Regency Embarcadero, San Francisco

CALL FOR PAPERS

Syllabus2004 will feature informative sessions relevant to technology for higher education. College and university IT directors and their staff, administrators, instructional technologists, faculty, and others involved in implementing or using technology will want to participate.

The five-day event will incorporate a range of session types, from in-depth skill development workshops to highly strategic panel discussions and visionary keynotes. Breakout sessions will be offered in five timely conference tracks, and poster sessions will provide an opportunity for face-to-face interaction.

In view of a normally large response to the Call for Papers for our annual summer event, we encourage you to submit your proposal well in advance of the due date of January 5, 2004.

CONFERENCE CONTENT - TRACKS

In five conference tracks, we examine the central themes and key technologies that have become increasingly critical to informed decision makers and faculty in higher education. Some overlap among the tracks is natural, so feel free to choose one or two tracks into which your proposal will most likely fit.

TRACK 1 - NEW TECHNOLOGIES AND TRENDS

From handheld computers to tablet PCs, ePortfolios, and new high-tech tools for instruction, this track samples the new and emerging technologies and applications that are sure to make a difference in the development and delivery of education.

- High-tech tools for instruction
- ePortfolios
- Tablet PCs
- Handheld devices and PDAs
- Wireless instruction
- New publishing technologies
- Smart buildings and classrooms
- Collaboration technologies
- Trends in personal computing
- Voice recognition
- Mobile computing
- Advanced networking applications

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TRACK 2 - INTERACTIVE MEDIA

With today's interactive media, educators can employ new strategies to support teaching and collaborative learning. Streaming technologies, Web casting, and interactive Web sites are being leveraged for efficient and effective content delivery. This track examines how interactive technologies are being used in the classroom, the lab, and for distance education, and highlights the enabling technologies and standards that help make it all possible.

- Simulations and virtual reality applications
- Web design
- Interactive labs
- Human-computer interface
- XML in education
- Web-based image databases
- Web development tools
- High-end digital video
- Streaming media
- Virtual laboratories
- Visualization and interactive 3D modeling

TRACK 3 - IT IMPLEMENTATION AND SUPPORT

Successful implementations of technology include evaluation and support strategies, along with planning for integration with enterprise systems. This track shows what institutions are doing to support faculty development, evaluate technology programs, provide help desk services, and offer resources for technology integration.

- Help desk and technology support services
- Learning technology groups
- Technology program evaluation
- Faculty development and support
- Learning objects and open resources
- Standards and open source
- Web integration
- Web services technologies
- Managing Web-based content resources
- Web search tools
- Digital libraries
- Information repositories and data exchange

TRACK 4 - STRATEGIC PLANNING/ ADMINISTRATIVE ISSUES

Strategic planning may involve a myriad of challenges, from infrastructure issues, to accreditation of distance learning programs, to section 508 compliance. Concerns may include how to determine return on technology investment, or how to plan for current and future waves of technology, portals, and learning management systems.

- Technology infrastructure and IT planning
- Student administration systems
- Online student services
- Course management systems/learning management systems
- Accreditation of distance learning programs
- Accessible information technology
- Content management systems
- Campus portals
- Faculty support and rewards
- eCommerce
- Security for campus environments
- Intellectual property issues
- Globalization of .edu: policies and practices

TRACK 5 - TEACHING WITH TECHNOLOGY

This track offers a faculty view of the intersection of technology and pedagogy. Join colleagues as they discuss new models of learning, present case studies in their disciplines, and explore relevant topics including instructional design standards, technology and student learning, and more.

- Technology and pedagogy
- Instructional design standards
- Technology and student learning
- Student assessment practices
- Teaching studio courses online
- Student technology assistants
- Teaching in new technology environments
- Interactive teaching modules
- Automating feedback to students
- Online student/faculty communications
- Online course content resources
- Curriculum redesign

HOW TO SUBMIT A PROPOSAL

Interested parties are invited to submit proposals via e-mail per the following instructions. All relevant proposals will be considered. The final date for submission is January 5, 2004. Notifications of acceptance will be made by February 1, 2004. Due to a large volume of proposals and multiple submissions, you will receive notification upon receipt and also upon the *acceptance* of your proposed session only.

Please note: As a condition of acceptance, each presenter will be required to submit, by Friday, April 2, 2004, a 1,000- to 1,500-word article for consideration for publication in the conference proceedings on the Syllabus Web site or in ***Syllabus*** magazine.

FULL -AND HALF-DAY WORKSHOPS

(3-6 hours)
Classroom style, in-depth workshops that explore the hows and whys of technology implementation in the subject areas of the tracks.

BREAKOUT SESSIONS

(1-1.5 hours)
Presentations that introduce a technology, program, or pedagogical strategy as well as the issues and benefits of implementation in the higher education environment.

PANEL SESSIONS

(1-1.5 hours)
Plenary sessions with a group of speakers and a moderator brought together for a discussion or debate of topics selected from the conference tracks.

TECHNOLOGY APPLICATION CASE STUDIES

(1-1.5 hours)
These sessions are focused on practical case studies of technology applications and integration in higher education. This is an opportunity for all those involved in IT implementation and operations – faculty, administrators, and technologists – to share their experiences with implementation teams from other campuses. These sessions should be issues/results-focused in line with the conference tracks.

POSTER SESSIONS

A detailed look at graphic presentations and papers posted in designated areas. Poster presenters will be on hand for informal discussion at designated session times.

SUBMISSIONS SHOULD INCLUDE THE FOLLOWING INFORMATION:

I. The title of the presentation
II. The proposed format, e.g., breakout session (see session types, above)
III. An abstract of the presentation content (600 words or less)
IV. An indication of the conference track(s) into which your topic would most likely fall
V. A brief session description suitable for publication (one 75-word paragraph)
VI. Name and academic title (e.g., Ph.D. or Ed.D.) for each presenter
VII. E-mail address and phone number for each presenter (please include both home and office phone numbers)
VIII. Presenter bio(s) suitable for publication (one 75-word paragraph each – be sure to include current position and affiliation)
IX. Any further information that might be helpful in determining the relevance of your topic to the conference

SUBMIT YOUR PROPOSAL BY E-MAIL:

Please include the following in the subject line (where "lastname" is the main presenter's last name): **Syllabus2004 – lastname**

E-mail your proposal to: **speaking@syllabus.com**

Presenters whose proposals have been accepted through the Call for Papers are entitled to receive a "speaker" discount.

Thank you for your proposal. For questions pertinent to your submission, please call Jim Turner at (818) 734-1520 x217 or e-mail jturner@101com.com.

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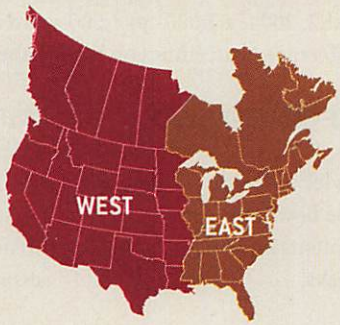

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Digital Tweed, *continued from page 21*

Planning for wireless involves the obvious conversations about costs and content. Controlling access and network security are understandably major concerns. Curricular consequences remain largely unknown.

For me, however, the most interesting student issues involve collaboration and compelling convenience.

Over the past two decades, we've all seen students gather around the computer. One works the keyboard as the others talk or watch. But what happens when small groups of students work together, each with an untethered notebook computer? Does the nature of collaboration change? Do students engage in a kind of parallel processing, unbundling the task as each brings new perspectives, informed by new information found from different parts of the Web? Does technology-enhanced collaboration bring together more parts for a larger (or better) gestalt?

While we know that wireless offers incredible convenience, we should also ask if that convenience is compelling. How do we assess the *benefit of investment* in wireless, a larger, more encompassing measure than the standard ROI that focuses on financials. For example, does wireless provide more (or better) access? If so, for which categories of users? And how should we measure access: Number and kind of users? Or time online?

These are more than just "academic" questions. The continuing campus conversations about IT strategy require real data—real evidence—that these investments generate significant, measurable benefits.

The OneCleveland and Case Western Reserve University wireless initiatives provide an important opportunity—for the campus community and for the Cleveland community—to experience and to monitor the impact and benefits of expanded access and expansive wireless. It will be very interesting to watch Cleveland get hot.

[Editor's note: Casey Green will co-anchor a special Ahead of the Curve broadcast session, "An Open Discussion About Open Source" from the Syllabus fall2003 conference in Cambridge, Mass. on December 8. For updates, visit www.syllabus.com.]

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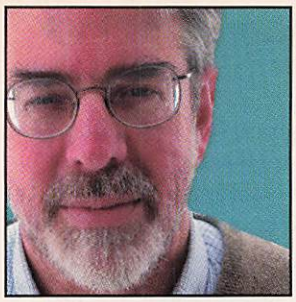
Reflections, *continued from page 42*

for you. Really, users are no dummies and if they are there are books just for them on every imaginable subject. Buying users copies of *SQL for Dummies* ($17.49 at Amazon.com) is a lot cheaper than having your expensive IT staff write a whole bunch of reports for them in SQL. Empower your users! Give them control of their own raw data! You thought users wanted information, not data, but they're never happy with your idea of information. Why try to figure out what users want? It's a hopeless task. You might as well just give users raw data and let them deal with it the way they think is best. Amazon.com has 2,014 entries for *Dummies* books. Think how smart your users will be once they've read them all. You'll never have to do expensive software development again.

Schools often provide free food for you and your staff for working meetings during lunch. Assuming that you eat about $8 worth of food during the extra hour of work, that turns out to be about $16,000 per year. This may be a good deal for cyber sapiens but not for staff. Would your staff work a vacation day in return for *three* free meals? Your staff needs a break during the day. You cannot buy that time for only $8 per hour. What looks like a gain is really a loss in productivity and creativity. If you can only schedule meetings during meal times you don't have an overworked staff, you have a dysfunctional organization.

We all complain about spam and junk mail, but the pitches they make deliberately strike at some place deep inside us that longs for a FREE ride; a silver bullet to solve our every problem with no effort. People *do* send Mrs. Ahmed money. IT planning is difficult and risky and results in decisions that may be very expensive. We cannot avoid the high cost of high-quality IT no matter how temptingly Mrs. Ahmed beckons us with her siren song.

Howard Strauss *(howard@princeton.edu) is the manager of technology strategy and outreach at Princeton University.*



Howard Strauss

REFLECTIONS

ANOTHER LOOK AT EDUCATION TECHNOLOGY

The FREE, 0% APR, Better Sex, No Effort Diet

I AM MRS. HAJIAH HASSAN AHMED, THE WIFE OF LATE CHIEF ALHAJI HASSAN AHMED...I SEEK IN CONFIDENCE THAT YOU ASSIST ME TO INVEST THIS US$34,000,000 FUND. I HAVE RESOLVED TO DEPART 25% OF THE TOTAL SUM TO YOU FOR YOUR ASSISTANCE IN THIS TRANSACTION SECURED BY YOUR GOOD FAITH DEPOSIT OF US$5,000.

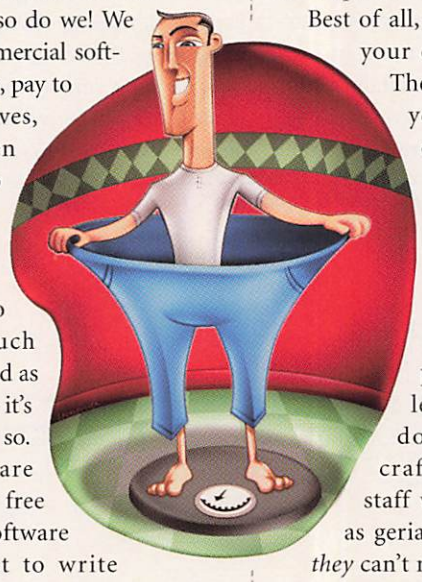
Few of us would rush to send Mrs. Ahmed the $5,000 she asks for in return for a promised $8.5 million. This is clearly the mythical free lunch; a scam; a pitch that promises something for nothing; a special deal only for us. We are all much too sophisticated to believe that millions of dollars will fall into our laps with no effort on our part—or are we? Many of us buy the following scams where perhaps the lack of all caps serves to disguise them.

Free Software

Why buy expensive software or spend millions to develop it yourself? You can get complex systems at absolutely NO COST! Yes, instead of having highly paid programmers at Microsoft, IBM, Sun, or even Blackboard build your critical university systems, you can have scores of software gurus scattered around the globe working completely independently build them for you FOR FREE. These folks are some of the same great people who are supposed to be working for you anyway, plus a smattering of teenagers too young to work at Redmond, hackers, virus creators, and a menagerie of others with whom you will feel great pride in entrusting your IT infrastructure.

This is the alluring pitch of open source software. We may have to give up project planning, quality control, coding standards, accountability, version control, and support, but it's FREE and we get the ability to modify the source code ourselves, something that is extremely dangerous to do, was discredited decades ago, and few people do anyway.

Yes, PeopleSoft is very expensive and those greedy folks at WebCT expect to make a profit, but they have to pay for quality software to be developed and so do we! We either pay commercial software developers, pay to build it ourselves, or pay the even higher price to manage and maintain FREE open source software. Who cares how much we have to spend as long as they say it's free—or nearly so. While you are installing your free open source software you may want to write Mrs. Ahmed a check. Her $8.5 million will help pay for the real cost of that free software.



Free Labor

Another way to get free software is to have students develop our critical systems. We all know how clever students are and how being born in the computer age they have bypassed a million years of evolution to become *cyber sapiens.* Software development is instinctive to them. While your aging, over-21 staff demands high salaries and benefits, and fusses with security, documentation, and project planning, cyber sapiens work for a few dollars an hour and can manage several projects in their heads without writing a single thing down. They also write bug-free code, work during exams and vacations, and are not distracted by alcohol, sports, or the acquisition of potential mates.

Best of all, students do not tie up your expensive equipment. They can develop and run your systems on their own dorm computers where their cyber sapien friends can do quality assurance with your confidential data. It is no wonder that we are so sad to see 25 percent of our students leave each year, abandoning their superbly crafted systems. Your IT staff will let you know that as geriatric non-cyber sapiens *they* can't manage these orphaned student-developed systems so they must be passed on to the next class of cyber sapiens.

Free Market

You can also get free software developed by having your users develop it

continued on page 41

There's nothing uniform about the 3,363 U.S. colleges, so HP offers 3,363 IT solutions.

Working with you as a team, HP can design a customized solution for your campus by combining a comprehensive range of products and services with the flexibility of open standards. Together, we'll assess your current infrastructure and collaborate on a new IT strategy to reach goals set by you. You'll get unique, complete solutions without the disadvantages of proprietary technologies that expect you to scrap investments in existing infrastructure. For greater agility semester to semester, we'll create dynamic links connecting your entire campus to your network infrastructure. So from hardware like HP notebook PCs with Intel® Centrino™ mobile technology to services and support, HP is the one company that can deliver a wide range of solutions that work with what you've got today and tomorrow. HP's adaptive enterprise solutions mean you can demand more—more accountability, more agility—while reducing complexity, cost and compromises. In other words, when you demand more, you punt less.

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